



# STIC Search Report

## Biotech-Chem Library

STIC Database Tracking Number: 111583

TO: Michael Lavilla  
Location: REM 5e79  
Thursday, January 08, 2004  
Art Unit: 1775  
Phone: 571-272-1539  
Serial Number: 09 / 890438

From: Jan Delaval  
Location: Biotech-Chem Library  
Remsen Building – 1A51  
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### Search Notes

1/21/02

=> fil reg

FILE 'REGISTRY' ENTERED AT 09:11:15 ON 08 JAN 2004

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STRUCTURE FILE UPDATES: 6 JAN 2004 HIGHEST RN 634878-43-6

DICTIONARY FILE UPDATES: 6 JAN 2004 HIGHEST RN 634878-43-6

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2003

Please note that search-term pricing does apply when conducting SmartSELECT searches.

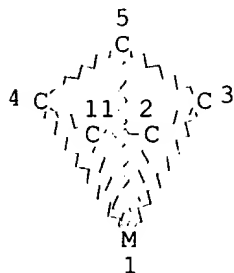
Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:

<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> d sta que 133

L18 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 6

STEREO ATTRIBUTES: NONE

L19 SCR 1932

L21 18657 SEA FILE=REGISTRY SSS FUL L18 AND L19

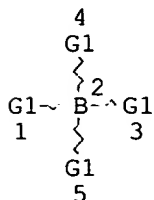
L22 12526 SEA FILE=REGISTRY ABB=ON PLU=ON L21 AND (TI OR ZR OR FE OR RU OR OS OR HF OR V OR CR OR MO OR W)/ELS

L23 10643 SEA FILE=REGISTRY ABB=ON PLU=ON L22 AND 1/B

L24 686 SEA FILE=REGISTRY ABB=ON PLU=ON L22 AND 2/B

L25 8594 SEA FILE=REGISTRY ABB=ON PLU=ON (L23 OR L24) AND NC>=2

L28 STR



VAR G1=CY/O/C  
 NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 5

STEREO ATTRIBUTES: NONE

L30 3958 SEA FILE=REGISTRY SUB=L21 SSS FUL L28  
 L31 3179 SEA FILE=REGISTRY ABB=ON PLU=ON L30 AND L22  
 L32 3179 SEA FILE=REGISTRY ABB=ON PLU=ON L31 AND (L23 OR L24)  
 L33 2784 SEA FILE=REGISTRY ABB=ON PLU=ON L32 AND L25

=> d his

(FILE 'HOME' ENTERED AT 08:24:12 ON 08 JAN 2004)  
 SET COST OFF

FILE 'HCAPLUS' ENTERED AT 08:24:22 ON 08 JAN 2004

L1 1 S (WO2000-JP518 OR JP99-24294)/AP, PRN  
 E AUTEX/AP, CS  
 L2 4 S E4-E8  
 E HIWASA S/AU  
 L3 8 S E3, E5  
 L4 10 S L1-L3  
 E POLYMERIZATION/CT  
 E E3+ALL  
 L5 3 S E3, E2+NT AND L4  
 E E23+ALL  
 L6 3 S E2+NT AND L4  
 L7 6 S L5, L6  
 L8 6 S POLYMER?/SC, SX AND L4  
 L9 6 S L7, L8  
 L10 3 S L9 AND (?BORON? OR ?BORIC? OR ?BORAT?)  
 L11 3 S L1, L10  
 SEL RN

FILE 'REGISTRY' ENTERED AT 08:29:03 ON 08 JAN 2004

L12 76 S E1-E76  
 L13 35 S L12 AND B/ELS  
 L14 38 S L12 AND (TI OR ZR OR FE OR RU OR OS OR HF OR V OR CR OR MO OR  
 L15 23 S L13 AND L14  
 L16 27 S L13, L14 NOT L15  
 L17 1 S FERROCENE/CN  
 L18 STR  
 L19 SCR 1932  
 L20 50 S L18 AND L19  
 L21 18657 S L18 AND L19 FUL  
 SAV TEMP L21 LAVILLA890/A  
 L22 12526 S L21 AND (TI OR ZR OR FE OR RU OR OS OR HF OR V OR CR OR MO OR  
 L23 10643 S L22 AND 1/B  
 L24 686 S L22 AND 2/B  
 L25 8594 S L23, L24 AND NC>=2  
 L26 STR  
 L27 50 S L26 SAM SUB=L21  
 L28 STR L26  
 L29 50 S L28 SAM SUB=L21  
 L30 3958 S L28 FUL SUB=L21  
 SAV L30 LAVILLA890A/A

L31 3179 S L30 AND L22  
L32 3179 S L31 AND L23,L24  
L33 2784 S L32 AND L25

FILE 'HCAPLUS' ENTERED AT 08:41:14 ON 08 JAN 2004

L34 996 S L33  
L35 2 S L4 AND L34  
E POLYMERIZATION/CT  
E E3+ALL  
E E23+ALL  
L36 93437 S E2  
L37 119105 S E2+NT  
L38 300 S L34 AND L36  
L39 308 S L34 AND L37  
L40 308 S L38,L39  
L41 10 S L40 AND EPOXY  
E EPOXY/CT  
L42 395 S E24,E31  
E EPOXY RESINS/CT  
E E3+ALL  
L43 119577 S E7,E6  
L44 9782 S E38  
L45 7 S L40 AND L42-L44  
L46 10 S L41,L45  
L47 60 S L40 AND (?SILOX? OR ?SILAN? OR ?SILIC?)  
L48 89 S L40 AND ?CRYST?  
L49 13 S L48 AND L46,L47  
L50 11 S L49 NOT L35  
SEL DN AN 3  
L51 1 S E1-E3 AND L50  
L52 3 S L35,L51  
L53 3 S L48 AND ION ASSOC?  
L54 3 S L52,L53  
L55 13 S L34 AND (POLYAMIDE# OR HETEROCYCL? OR PHENOLIC OR ACETAL# OR  
L56 7 S L40 AND L55  
L57 9 S L54,L56 AND L1-L11,L34-L56  
L58 171 S L40 AND (METHYLOL OR HYDROXYMETHYL OR ETHYLEN? OR POLYACETAL?  
L59 171 S L58 AND L40  
L60 112 S L33 (L) CAT/RL AND L59  
L61 3 S L60 AND L57  
L62 9 S L57,L61  
L63 80 S L60 AND (PY<=1999 OR PRY<=1999 OR AY<=1999)  
L64 78 S L63 NOT L62  
L65 18 S L64 NOT OLEFIN?  
L66 60 S L64 NOT L65  
L67 59 S L59 NOT L60,L57  
L68 42 S L67 AND (PY<=1999 OR PRY<=1999 OR AY<=1999)  
L69 15 S L68 AND ?CRYS?  
L70 47 S L48 AND (PY<=1999 OR PRY<=1999 OR AY<=1999)  
L71 18 S L70 NOT L62-L69  
SEL DN AN 3 4 18  
L72 3 S E4-E12 AND L71  
L73 12 S L62,L72 AND L1-L11,L34-L72  
SEL DN AN 1 3  
L74 10 S L73 NOT E13-E18

FILE 'REGISTRY' ENTERED AT 09:11:15 ON 08 JAN 2004

=> fil hcaplus

FILE 'HCAPLUS' ENTERED AT 09:11:29 ON 08 JAN 2004

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FILE COVERS 1907 - 8 Jan 2004 VOL 140 ISS 2  
FILE LAST UPDATED: 6 Jan 2004 (20040106/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d 174 all hitstr tot

L74 ANSWER 1 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 2002:688186 HCAPLUS  
DN 137:239720  
ED Entered STN: 11 Sep 2002  
TI One-component photocurable resist composition for electronic parts  
IN Hiwasa, Nobu  
PA Otex K. K., Japan  
SO Jpn. Kokai Tokkyo Koho, 9 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM C08G059-72  
ICS C09K003-00  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 37, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 2002256063	A2	20020911	JP 2001-55168	20010228
PRAI	JP 2001-55168		20010228		

OS MARPAT 137:239720

AB The composition comprises (a) cation-polymerizable organic substances of **methylol** compds., **ethylenically** unsatd. compds., and/or **heterocyclic** compds. 0.1-95, (b) latent photopolymn. initiators of **crystalline ion-association** substances represented by  $[C_5(R_1)_n]_2mMm]_1[B(R_2)_4]_1$  [M = Fe; C5 = cyclopentadienyl; R1 = electron-donating alkyl group bonded to C of C5; n = 5; m = 1 = 1; R2 = (halogenated) aryl or halogenated alkyl ligand coordinated to B atom; 4 of R2 have same identity] 0.01-10, and (c) sensitizers 0.1-10%. The composition may contain 0.5-90% inorg. fillers. The composition is used for patterning resists, solder resists, plating resists, hole-embedding inks and resists, and conductive inks.

ST photocurable resist cation polymerizable org substance; **ion assocn** substance latent photopolymn initiator resist; **sensitizer** latent photopolymn initiator one component resist; **methylol** cation polymerizable photoresist elec part; unsatd compd cation polymerizable photoresist elec part; **heterocyclic** compd cation polymerizable photoresist elec part

IT Ethers, uses

RL: TEM (Technical or engineered material use); USES (Uses)  
(cyclic; one-component photoresist composition containing cation-polymerizable

substances, latent initiators, and sensitizers for electronic parts)

IT Inks  
(elec. conductive; one-component photoresist composition containing cation-polymerizable substances, latent initiators, and sensitizers for electronic parts)

IT Electric conductors  
(inks; one-component photoresist composition containing cation-polymerizable substances, latent initiators, and sensitizers for electronic parts)

IT Photoresists  
Printed circuit boards  
Solder resists  
(one-component photoresist composition containing cation-polymerizable substances, latent initiators, and sensitizers for electronic parts)

IT Cyclosiloxanes  
Epoxides  
Epoxy resins, uses  
Lactams  
RL: TEM (Technical or engineered material use); USES (Uses)  
(one-component photoresist composition containing cation-polymerizable substances, latent initiators, and sensitizers for electronic parts)

IT Polymerization catalysts  
(photopolymn., latent; one-component photoresist composition containing cation-polymerizable substances, latent initiators, and sensitizers for electronic parts)

IT 1344-28-1, Alumina, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(Admafine AO 802, filler; one-component photoresist composition containing cation-polymerizable substances, latent initiators, and sensitizers for electronic parts)

IT 141-78-6, Acetidin, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(acetidin; one-component photoresist composition containing cation-polymerizable substances, latent initiators, and sensitizers for electronic parts)

IT 471-34-1, Calcium carbonate, uses 7631-86-9, SO-E2, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(filler; one-component photoresist composition containing cation-polymerizable substances, latent initiators, and sensitizers for electronic parts)

IT 220517-46-4  
RL: CAT (Catalyst use); USES (Uses)  
(one-component photoresist composition containing cation-polymerizable substances, latent initiators, and sensitizers for electronic parts)

IT 56-81-5D, Glycerin, polyglycidyl ether 95-96-5, Lactide 96-08-2, Limonene dioxide 109-99-9, Tetrahydrofuran, uses 110-88-3, Trioxane, uses 122-60-1, Phenyl glycidyl ether 123-91-1, Dioxane, uses 151-56-4, Aziridine, uses 286-20-4, Cyclohexene oxide 503-30-0, Oxetane 592-90-5, Oxepane 646-06-0, Dioxolane 930-22-3 1072-43-1, Propylene sulfide 2238-07-5, Diglycidyl ether 2386-90-5, Bis(2,3-epoxycyclopentyl) ether 2426-08-6, Butyl glycidyl ether 2451-62-9, Triglycidyl isocyanurate 4206-61-5, Diethylene glycol diglycidyl ether 5493-45-8 6303-21-5D, Phosphinic acid, esters 10580-65-1, Nonyl glycidyl ether 13410-52-1 13561-08-5, 2,6-Diglycidyl phenylglycidyl ether 13598-36-2D, Phosphonic acid, esters 16096-31-4, 1,6-Hexanediol diglycidyl ether 17557-23-2, Neopentyl glycol diglycidyl ether 18425-64-4, Trimethylolpropane diglycidyl ether 26142-30-3, Polypropylene glycol diglycidyl ether 26283-70-5, Epikote YL 6663 26403-72-5, Polyethylene glycol diglycidyl ether 26447-14-3, Cresyl glycidyl ether 28768-32-3 30424-08-9 30969-75-6, Oxazoline 58421-55-9, Epiclon 830S 65992-66-7, 1,3-Bis(N,N-diglycidylaminomethyl)cyclohexane 92308-50-4, RE 305 172416-00-1, Aron Oxetane OXT 121  
RL: TEM (Technical or engineered material use); USES (Uses)

(one-component photoresist composition containing cation-polymerizable substances, latent initiators, and sensitizers for electronic parts)

IT 56-55-3, 1,2-Benzoanthracene 81-64-1, Quinizarin 82-34-8,  
1-Nitroanthraquinone 84-11-7, 9,10-Phenanthrenedione 84-51-5,  
2-Ethylantraquinone 84-54-8, 2-Methylantraquinone 84-65-1,  
Anthraquinone 85-52-9, o-Benzoylbenzoic acid 90-44-8, Anthrone  
90-47-1, Xanthone 90-96-0, 4,4'-Dimethoxybenzophenone 92-91-1  
93-04-9, 2-Methoxynaphthalene 98-86-2, Acetophenone, uses 98-86-2D,  
Acetophenone, dimethoxy deriv 100-06-1 117-80-6, 2,3-Dichloro-1,4-  
naphthoquinone 119-61-9, Benzophenone, uses 120-12-7, Anthracene, uses  
131-09-9, 2-Chloroanthraquinone 131-58-8, 2-Methylbenzophenone  
134-81-6, Benzil 134-84-9, 4-Methylbenzophenone 256-81-5,  
5H-Dibenzo[a,d]cycloheptene 492-22-8, Thioxanthone 527-61-7,  
2,6-Dimethyl-1,4-benzoquinone 574-09-4, 2-Ethoxy-2-phenylacetophenone  
605-94-7, 2,3-Dimethoxy-5-methyl-1,4-benzoquinone 606-28-0, Methyl  
o-benzoylbenzoate 611-94-9, 4-Methoxybenzophenone 611-99-4,  
4,4'-Dihydroxybenzophenone 615-93-0, 2,5-Dichloro-p-benzoquinone  
643-65-2, 3-Methylbenzophenone 829-20-9 1137-42-4,  
4-Hydroxybenzophenone 1201-38-3 1210-12-4, 9-Cyanoanthracene  
1210-35-1, Dibenzosuberone 1217-45-4, 9,10-Dicyanoanthracene 1676-63-7  
2040-04-2 2128-93-0, 4-Phenylbenzophenone 2498-66-0,  
1,2-Benzanthraquinone 2571-39-3, 3,4-Dimethylbenzophenone 2880-58-2  
3524-62-7, Benzoin methyl ether 4044-60-4, 2,5-Dimethylbenzophenone  
6175-45-7, Diethoxyacetophenone 6652-28-4, Benzoin isopropyl ether  
10354-00-4, Dibenzosuberone 10373-78-1, Camphorquinone 13020-57-0,  
3-Hydroxybenzophenone 15774-82-0, 2-Methylthioxanthone 17214-11-8  
25620-59-1, Aminoanthraquinone 26708-04-3, 2-Ethyl-9,10-  
dimethoxyanthracene 27938-76-7, Hydroxyanthraquinone 30587-18-9,  
Anisoin 30637-95-7, Anthraquinonesulfonic acid 41295-28-7,  
3,3'-Dimethyl-4-methoxybenzophenone 75081-21-9, Isopropylthioxanthone  
76293-13-5, 2,4-Dimethylthioxanthone 79044-56-7 82799-44-8,  
2,4-Diethylthioxanthone 83846-85-9, 4-Benzoyl-4'-methyl-diphenyl sulfide  
182683-80-3 457652-97-0

RL: TEM (Technical or engineered material use); USES (Uses)  
(sensitizer; one-component photoresist composition containing  
cation-polymerizable substances, latent initiators, and sensitizers for  
electronic parts)

IT 220517-46-4

RL: CAT (Catalyst use); USES (Uses)  
(one-component photoresist composition containing cation-polymerizable  
substances, latent initiators, and sensitizers for electronic parts)

RN 220517-46-4 HCAPLUS

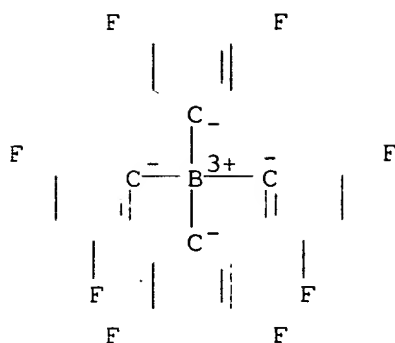
CN Ferrocenium, decamethyl-, tetrakis(3,5-difluorophenyl)borate(1-) (9CI)  
(CA INDEX NAME)

CM 1

CRN 153514-62-6

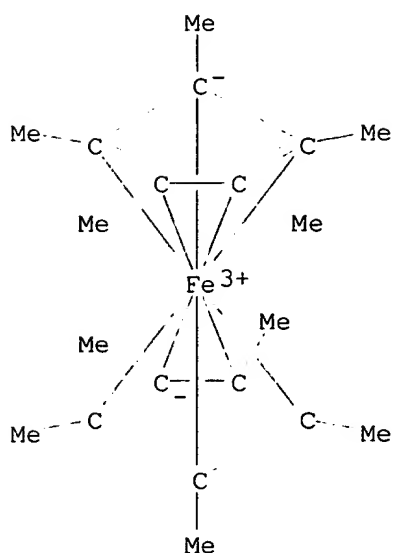
CMF C24 H12 B F8

CCI CCS



CM 2

CRN 54182-41-1  
 CMF C20 H30 Fe  
 CCI CCS



L74 ANSWER 2 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2000:553528 HCAPLUS  
 DN 133:164482  
 ED Entered STN: 11 Aug 2000  
 TI Novel **crystalline ion-association** substance,  
 process for producing the same, and polymerization initiator  
 IN Hiwasa, Shin  
 PA Autex, Inc., Japan  
 SO PCT Int. Appl., 65 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 IC ICM C07C017-02  
 ICS C07C019-00; C08F004-603; C08F004-70; C08G085-00; C07F005-02;  
 C07F015-02; C08G059-68  
 CC 35-3 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 42



FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000046171	A1	20000810	WO 2000-JP518	20000131 <--
	W: CA, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	JP 2000226396	A2	20000815	JP 1999-24294	19990201 <--
	EP 1153905	A1	20011114	EP 2000-902020	20000131 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
PRAI	JP 1999-24294	A	19990201	<--	
	WO 2000-JP518	W	20000131	<--	
OS	MARPAT 133:164482				
AB	The title substance, i.e., a metallocene <b>borate</b> , initiates photopolymerization. Thus, ferrocenium tetrakis(3,5-difluorophenyl) <b>borate</b> was prepared and used as a catalyst for the polymerization of 1,3,5,7-tetramethylcyclotetracyclosiloxane to form a film.				
ST	<b>cyclosiloxane</b> polymer catalyst ferrocenium fluorophenyl <b>borate</b> ; photopolymer catalyst metallocene <b>borate</b> ; thermal polymer catalyst metallocene <b>borate</b>				
IT	<b>Polymerization catalysts</b> (cationic; metallocene- <b>borate</b> <b>crystalline ion-association</b> substances for polymerization catalysts)				
IT	<b>Phenolic resins, preparation</b> RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) ( <b>epoxy</b> , novolak; metallocene- <b>borate</b> <b>cryst</b> ion- <b>association</b> substances for polymerization catalysts)				
IT	<b>Epoxy resins, preparation</b> RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (hydrogenated; metallocene- <b>borate</b> <b>crystalline ion-association</b> substances for polymerization catalysts)				
IT	<b>Functional groups</b> ( <b>hydroxymethyl</b> group; metallocene- <b>borate</b> <b>crystalline ion-association</b> substances for polymerization catalysts)				
IT	<b>Coating materials</b> <b>Electron donors</b> (metallocene- <b>borate</b> <b>crystalline ion-association</b> substances for polymerization catalysts)				
IT	<b>Coordination compounds</b> RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses) (metallocene- <b>borate</b> <b>crystalline ion-association</b> substances for polymerization catalysts)				
IT	<b>Polysiloxanes, preparation</b> RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (metallocene- <b>borate</b> <b>crystalline ion-association</b> substances for polymerization catalysts)				
IT	<b>Borates</b> <b>Cyclosiloxanes</b> <b>Heterocyclic compounds</b> <b>Metallocenes</b> <b>Polyamides, reactions</b> <b>Transition metal compounds</b> <b>Unsaturated compounds</b> RL: RCT (Reactant); RACT (Reactant or reagent) (metallocene- <b>borate</b> <b>crystalline ion-association</b> substances for polymerization catalysts)				

- IT **Epoxy resins, preparation**  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (phenolic, novolak; metallocene-borate crystalline ion-association substances for polymerization catalysts)
- IT **Polymerization catalysts**  
 (photopolymn.; metallocene-borate crystalline ion-association substances for polymerization catalysts)
- IT **Acetals**  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (polyacetals, nonpolymeric; metallocene-borate crystalline ion-association substances for polymerization catalysts)
- IT **Polymerization catalysts**  
 (thermal; metallocene-borate crystalline ion-association substances for polymerization catalysts)
- IT 119-61-9, Benzophenone, uses 1210-35-1  
 RL: CAT (Catalyst use); USES (Uses)  
 (metallocene-borate crystalline ion-association substances for polymerization catalysts)
- IT 143607-33-4P 156301-37-0P 288101-82-6P  
 288101-83-7P 288101-84-8P 288101-85-9P  
 288101-86-0P 288101-88-2P 288101-89-3P  
 288101-90-6P 288101-91-7P 288101-92-8P  
 288101-93-9P  
 RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
 (metallocene-borate crystalline ion-association substances for polymerization catalysts)
- IT 108-95-2DP, Phenol, novolak epoxy resins, preparation  
 1333-16-ODP, Bisphenol F, epoxy resins 9004-73-3P,  
 Poly(1,3,5,7-tetramethylcyclotetrasiloxane, SRU 9016-00-6P,  
 Poly(octamethylcyclotetrasiloxane), SRU 25037-57-4P, Poly(octamethylcyclotetrasiloxane) 26710-23-6P 27576-78-9P,  
 Poly(1,3,5,7-tetramethylcyclotetrasiloxane) 28323-47-9P, Poly(hexaethylcyclotrisiloxane), SRU 31305-85-8P,  
 Poly(1,3-bis(glycidoxypropyl)tetramethyldisiloxane) 32625-53-9P, Decamethylcyclopentasiloxane homopolymer 65581-98-8P, Epiclon 830 88483-06-1P, Poly(hexaethylcyclotrisiloxane) 110294-68-3P 111319-45-0P  
 117932-09-9P, Poly(dodecamethylcyclohexasiloxane) 147881-71-8P, Epiclon N 730A 183867-42-7P, Poly[oxy(phenylsilylene)] 183867-43-8P 220175-12-2P, Epikote RXE 21 288101-94-0P  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (metallocene-borate crystalline ion-association substances for polymerization catalysts)
- IT 102-54-5, Ferrocene 109-63-7, Boron trifluoride etherate 461-96-1, 1-Bromo-3,5-difluorobenzene 1291-47-0, Dimethylferrocene 2797-28-6 12152-94-2 12156-05-7 22533-15-9 31904-29-7, Butylferrocene 53954-86-2, tert-Amyl-ferrocene 66016-55-5, 1,2,4,1',2',4'-Hexamethylferrocene 79060-88-1 119861-51-7, Sodium tetrakis(3,5-difluorophenyl)borate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (metallocene-borate crystalline ion-association substances for polymerization catalysts)
- RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 RE
- (1) Klimova, E; J Organomet Chem 1998, V559(1-2), P43 HCAPLUS
  - (2) Pcd Polymere Gesellschaft m B H; EP 673946 A2 HCAPLUS
  - (3) Pcd Polymere Gesellschaft m B H; JP 841088 A
  - (4) Pcd Polymere Gesellschaft m B H; US 5521265 A 1996 HCAPLUS
  - (5) Studiengesellschaft Kohle MbH; JP 11152295 A HCAPLUS

- (6) Studiengesellschaft Kohle Mbh; EP 897926 A1 HCAPLUS  
 (7) Studiengesellschaft Kohle Mbh; US 5959132 A 1999 HCAPLUS

IT 143607-33-4P 156301-37-0P 288101-82-6P  
 288101-83-7P 288101-84-8P 288101-85-9P  
 288101-86-0P 288101-88-2P 288101-89-3P  
 288101-90-6P 288101-91-7P 288101-92-8P  
 288101-93-9P

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP  
 (Preparation); USES (Uses)

(metallocene-borate crystalline ion-  
 association substances for polymerization catalysts)

RN 143607-33-4 HCAPLUS

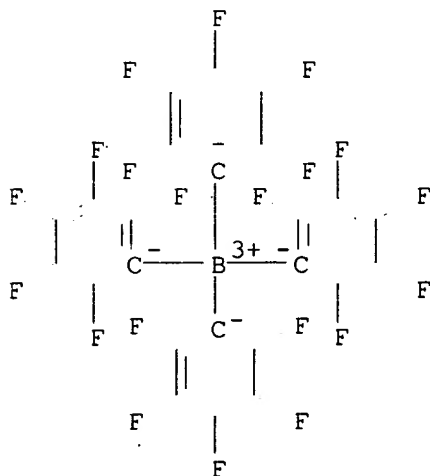
CN Ferrocenium, 1,1'-dimethyl-, tetrakis(pentafluorophenyl)borate(1-) (9CI)  
 (CA INDEX NAME)

CM 1

CRN 47855-94-7

CMF C24 B F20

CCI CCS

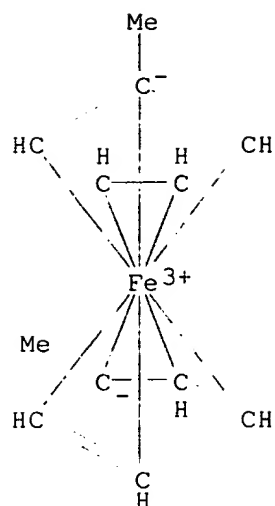


CM 2

CRN 12276-63-0

CMF C12 H14 Fe

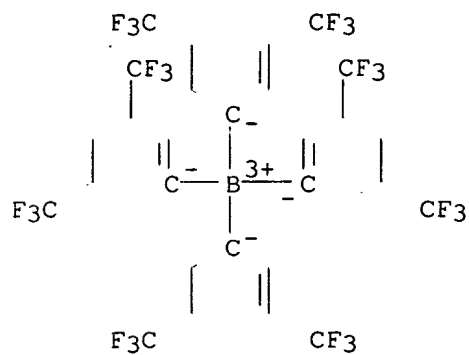
CCI CCS



RN 156301-37-0 HCAPLUS  
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 INDEX NAME)

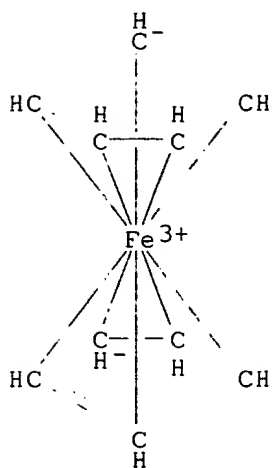
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 CCI CCS



CM 2

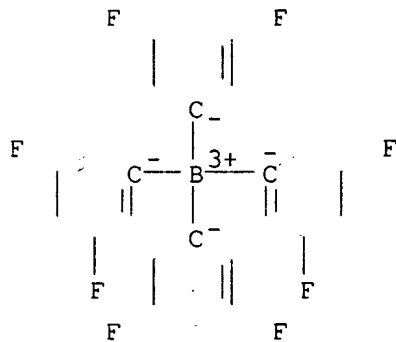
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 CMF C10 H10 Fe  
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RN 288101-82-6 HCAPLUS  
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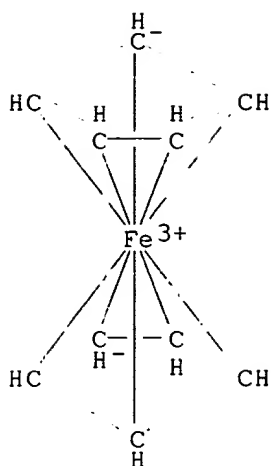
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CRN 153514-62-6  
 CMF C24 H12 B F8  
 CCI CCS



CM 2

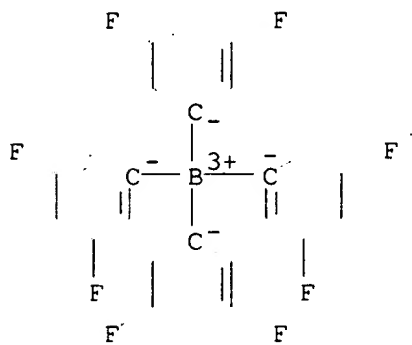
CRN 12125-80-3  
 CMF C10 H10 Fe  
 CCI CCS



RN 288101-83-7 HCAPLUS  
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 (CA INDEX NAME)

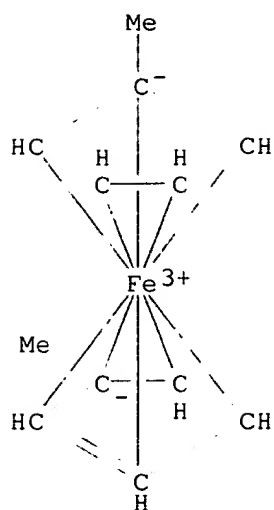
CM 1

CRN 153514-62-6  
 CMF C24 H12 B F8  
 CCI CCS



CM 2

CRN 12276-63-0  
 CMF C12 H14 Fe  
 CCI CCS



RN 288101-84-8 HCAPLUS

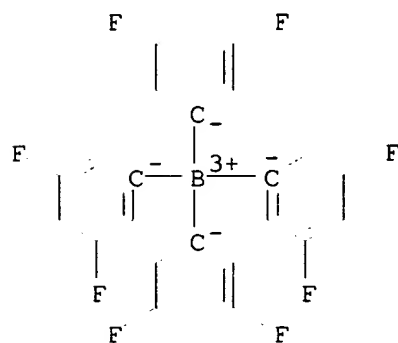
CN Ferrocenium, 1,1',2,2',4,4'-hexamethyl-, tetrakis(3,5-difluorophenyl)borate(1-) (9CI) (CA INDEX NAME)

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CRN 153514-62-6

CMF C24 H12 B F8

CCI CCS

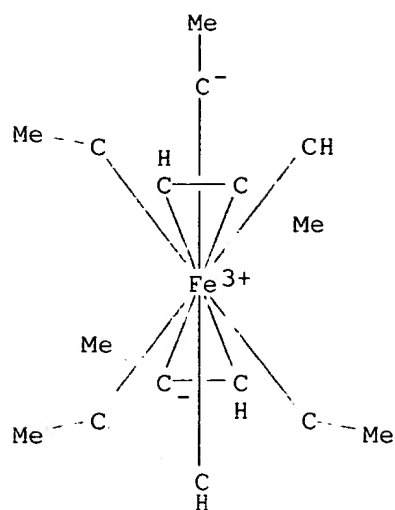


CM 2

CRN 66016-55-5

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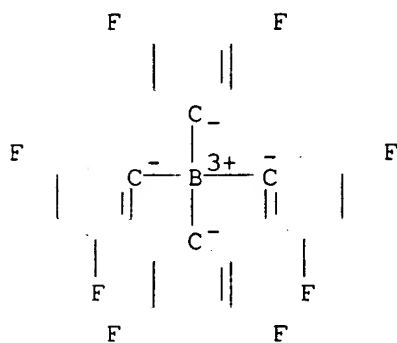
CCI CCS



RN 288101-85-9 HCAPLUS  
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 INDEX NAME)

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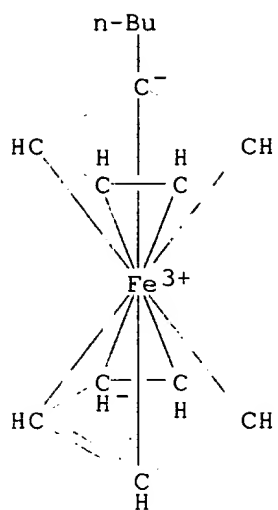
CRN 153514-62-6  
 CMF C24 H12 B F8  
 CCI CCS



CM 2

CRN 33306-90-0  
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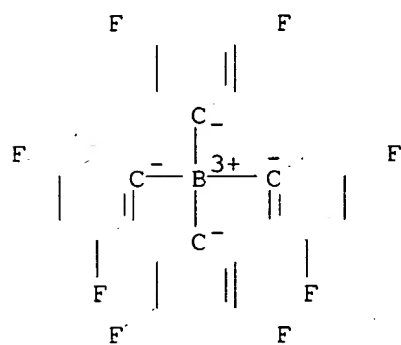




RN 288101-86-0 HCAPLUS  
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 (9CI) (CA INDEX NAME)

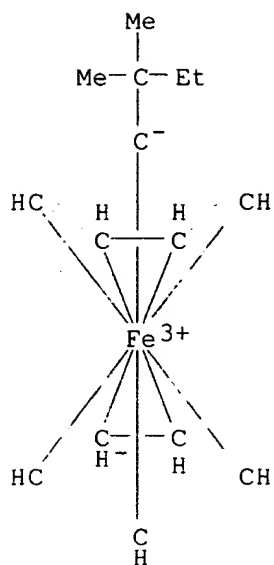
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CRN 153514-62-6  
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 CCI CCS



CM 2

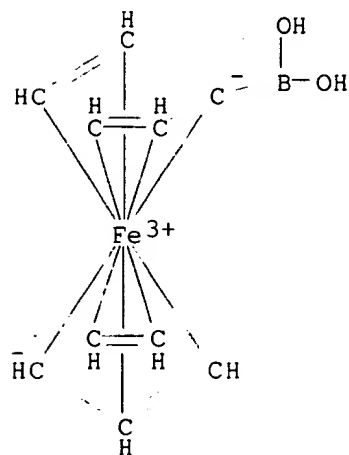
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 CCI CCS



RN 288101-88-2 HCAPLUS  
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 INDEX NAME)

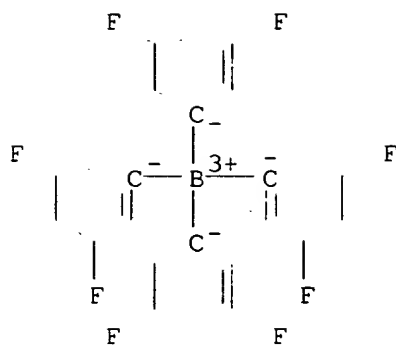
CM 1

CRN 288101-87-1  
 CMF C10 H11 B Fe O2  
 CCI CCS



CM 2

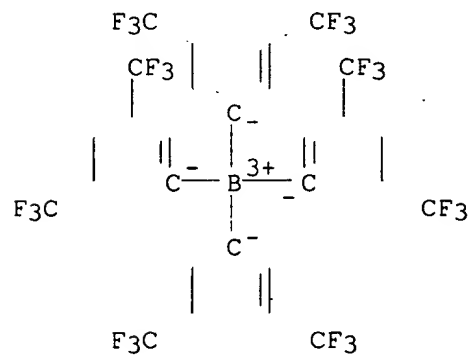
CRN 153514-62-6  
 CMF C24 H12 B F8  
 CCI CCS



RN 288101-89-3 HCAPLUS  
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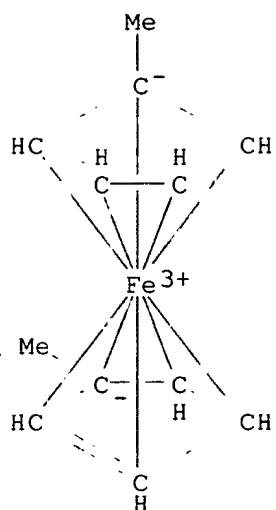
CM 1

CRN 79230-20-9  
 CMF C32 H12 B F24  
 CCI CCS

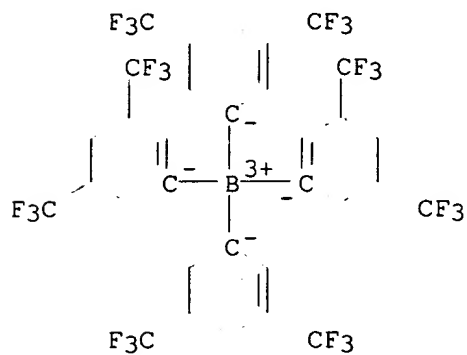


CM 2

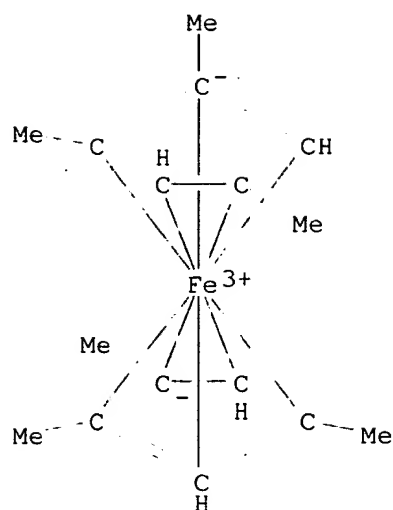
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 CMF C12 H14 Fe  
 CCI CCS



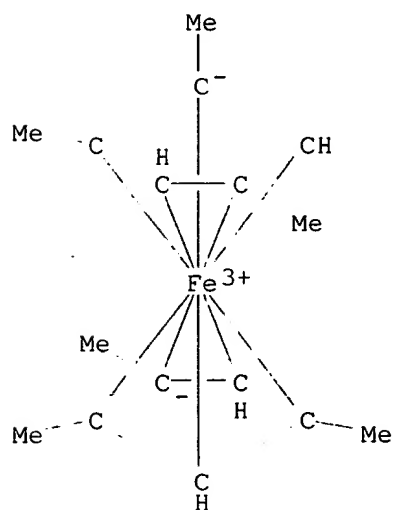
RN 288101-90-6 HCAPLUS  
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 CM 1  
 CRN 79230-20-9  
 CMF C32 H12 B F24  
 CCI CCS



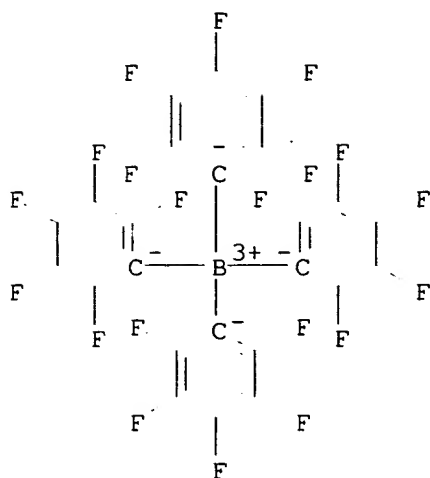
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 CMF C16 H22 Fe  
 CCI CCS



RN 288101-91-7 HCAPLUS  
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 (1-) (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 66016-55-5  
 CMF C16 H22 Fe  
 CCI CCS



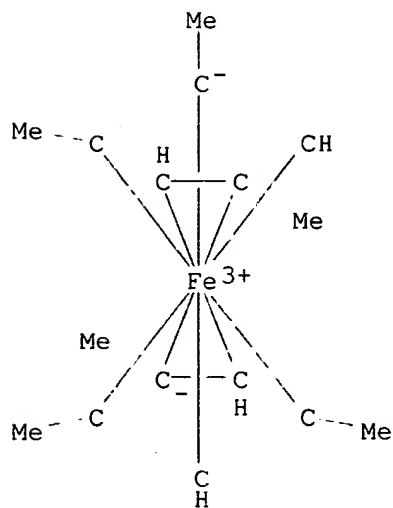
CM 2  
 CRN 47855-94-7  
 CMF C24 B F20  
 CCI CCS



RN 288101-92-8 HCAPLUS  
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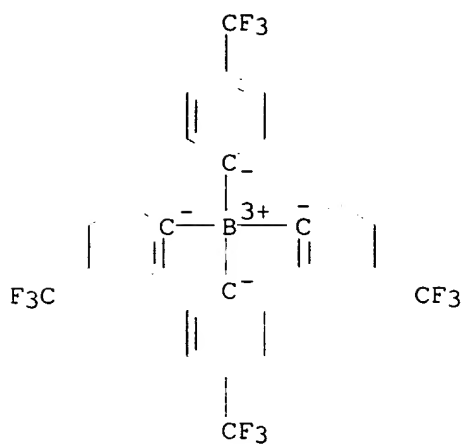
CM 1

CRN 66016-55-5  
 CMF C16 H22 Fe  
 CCI CCS



CM 2

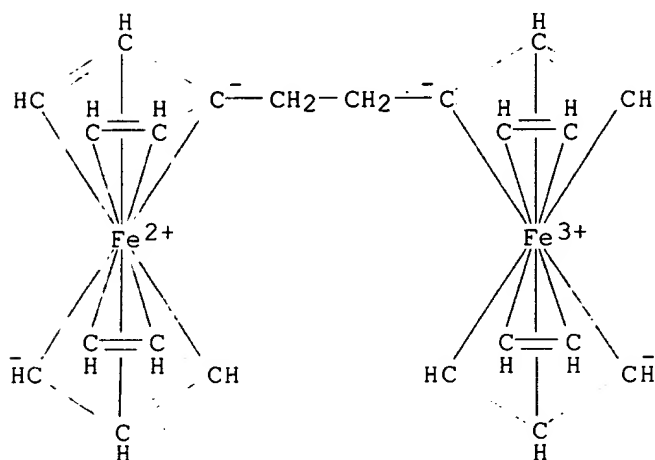
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 CMF C28 H16 B F12  
 CCI CCS



RN 288101-93-9 HCAPLUS  
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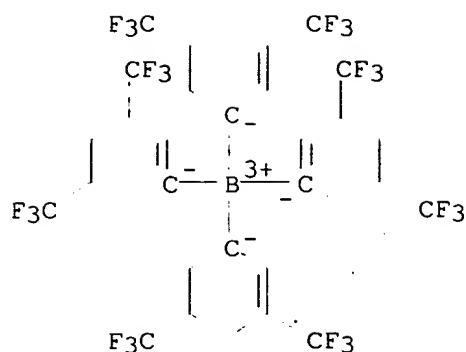
CM 1

CRN 227610-26-6  
 CMF C22 H22 Fe2  
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CM 2

CRN 79230-20-9  
 CMF C32 H12 B F24  
 CCI CCS



L74 ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:241314 HCAPLUS

DN 132:279654

ED Entered STN: 14 Apr 2000

TI Catalyst and methods for polymerizing cycloolefins

IN Lipian, John-Henry; Rhodes, Larry F.; Goodall, Brian L.; Bell, Andrew; Mimna, Richard A.; Fondran, John C.; Hennis, April D.; Elia, Christine N.; Polley, Jennifer D.; Sen, Ayusman; Saikumar, Jayaraman

PA B.F. Goodrich Company, USA; Penn State Research Foundation

SO PCT Int. Appl., 291 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C08F032-08

ICS C08F004-70

CC 35-3 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 67

FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000020472	A1	20000413	WO 1999-US23243	19991005
W: AE, AL, AU, AZ, BA, BB, BG, BR, BY, CA, CN, CZ, EE, GE, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, RO, RU, SD, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG AU 9962919 A1 20000426 AU 1999-62919 19991005 EP 1034196 A1 20000913 EP 1999-950213 19991005 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO PRAI US 1998-103120P P 19981005 US 1998-111590P P 19981209 WO 1999-US23243 W 19991005				

OS MARPAT 132:279654

AB Methods for the addition polymerization of cycloolefins involve using a cationic

Group 10 metal complex of a weakly coordinating anion of the formula:  $[(R')_z M(L')_x (L'')_y] [WCA]_d$ , wherein  $[(R')_z M(L')_x (L'')_y]$  is the cation complex where M represents a Group 10 transition metal; R' represents an anionic hydrocarbyl containing ligand; L' represents a Group 15 neutral electron donor ligand; L'' represents a labile neutral electron donor ligand; x is 1 or 2; and y is 0, 1, 2, or 3; and z is 0 or 1, wherein the sum of x, y, and z is 4; and [WCA] represents a weakly coordinating counter anion (such as pentafluorophenylborate); and b and d are nos.



representing the number of times the cation complex and weakly coordinating counter anion complex are taken to balance the electronic charge on the overall catalyst complex. A typical polymer was manufactured by diluting a mixture of 10  $\mu$ L PhMe solution of (allyl)palladium chloride dimer (6.23 mmol) and 10  $\mu$ L PhMe solution of tricyclohexylphosphine with PhMe to 1 mL total, adding the resulting solution to a PhMe solution containing butylnorbornene

56.1, 5-triethoxysilylnorbornene 6.21, and Li tetrakis(pentafluorophenyl)borate 0.0006 mmol, and heating 4 h at 65°.

ST transition metal complex catalyst cycloolefin polymn; allylpalladium cyclohexylphosphine fluorophenylborate catalyst butylnorbornene ethoxysilylnorbornene polymn

IT **Polysiloxanes, preparation**  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (block polycycloalkene-; transition metal complexes stabilized by weakly coordinating counterions for catalysts for polymerization of cycloolefins)

IT Amines, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (complexes; transition metal complexes stabilized by weakly coordinating counterions for catalysts for polymerization of cycloolefins)

IT **Polysiloxanes, preparation**  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (di-Me, Me vinyl, vinyl group-terminated, Gelest VMM 010, reaction products with hexylnorbornene and triethoxysilylnorbornene; transition metal complexes stabilized by weakly coordinating counterions for catalysts for polymerization of cycloolefins)

IT **Polysiloxanes, preparation**  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (di-Me, di-Ph, vinyl group-terminated, Gelest PDV 1625, reaction products with hexylnorbornene and triethoxysilylnorbornene; transition metal complexes stabilized by weakly coordinating counterions for catalysts for polymerization of cycloolefins)

IT Cycloalkenes  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (polymers; transition metal complexes stabilized by weakly coordinating counterions for catalysts for polymerization of cycloolefins)

IT **Polymerization catalysts**  
 (transition metal complexes stabilized by weakly coordinating counterions for catalysts for polymerization of cycloolefins)

IT Platinum-group metal complexes  
 RL: CAT (Catalyst use); USES (Uses)  
 (transition metal complexes stabilized by weakly coordinating counterions for catalysts for polymerization of cycloolefins)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (transition metal complexes stabilized by weakly coordinating counterions for catalysts for polymerization of cycloolefins)

IT 116-17-6, Triisopropyl phosphite 432-04-2, Tris(trifluoromethyl)phosphine 554-70-1, Triethylphosphine 585-48-8, 2,6-Di-tert-butylpyridine 594-09-2, Trimethylphosphine 603-34-9, Triphenylamine 603-35-0, Triphenylphosphine, uses 603-36-1, Triphenylstibine 607-01-2, Ethyldiphenylphosphine 672-66-2, Dimethylphenylphosphine 819-19-2, Di-tert-butylphosphine 829-84-5, Dicyclohexylphosphine 855-38-9, Tris(p-methoxyphenyl)phosphine 998-40-3, Tributylphosphine 1017-60-3, Bis(4-methylphenyl)phosphine 1038-95-5, Tri-p-tolylphosphine 1101-41-3, Tetraphenylbiphosphine 1159-54-2, Tris(4-chlorophenyl)phosphine 1259-35-4, Tris(pentafluorophenyl)phosphine 1485-88-7, (2-Methoxyphenyl)methylphenylphosphine 1605-53-4, Diethylphenylphosphine 1663-45-2, 1,2-Bis(diphenylphosphino)ethane 1732-72-5, Dibutylphosphine 1795-31-9, Tris(trimethylsilyl) phosphite 2155-96-6, Diphenylvinylphosphine 2234-97-1, Tripropylphosphine

2622-14-2, Tricyclohexylphosphine 2741-38-0, Allyldiphenylphosphine  
 2752-19-4, Tri-o-xenyl phosphite 4006-38-6, Diisobutylphosphine  
 4125-25-1, Triisobutylphosphine 4731-53-7, Tri-n-octylphosphine  
 4731-65-1, Tris(2-methoxyphenyl)phosphine 5074-71-5,  
 Bis(pentafluorophenyl)phenylphosphine 5518-52-5, Tris(2-furylphosphine  
 5525-95-1, Diphenyl(pentafluorophenyl)phosphine 6002-34-2,  
 tert-Butyldiphenylphosphine 6163-58-2, Tri-o-tolylphosphine 6224-63-1,  
 Tri-m-tolylphosphine 6372-40-3, Diphenylisopropylphosphine 6372-42-5,  
 Cyclohexyldiphenylphosphine 6372-44-7, Dibutylphenylphosphine  
 6476-36-4, Triisopropylphosphine 6476-37-5, Dicyclohexylphenylphosphine  
 7650-88-6, Tricyclopentylphosphine 7650-89-7, Tribenzylphosphine  
 7650-91-1, Benzyldiphenylphosphine 13406-29-6, Tris(p-  
 trifluoromethylphenyl)phosphine 13716-12-6, Tri-tert-butylphosphine  
 14180-51-9, Bis(4-methoxyphenyl)phenylphosphine 15383-58-1,  
 1,2-Bis(diphenylphosphino)propane 15573-38-3,  
 Tris(trimethylsilyl)phosphine 16523-89-0, Triallylphosphine  
 17261-28-8, 2-(Diphenylphosphino)benzoic acid 17586-49-1,  
 Tri-sec-butylphosphine 18437-78-0, Tris(p-fluorophenyl)phosphine  
 23743-26-2, 1,2-Bis(dicyclohexylphosphino)ethane 23897-15-6,  
 Tris(2,4,6-trimethylphenyl)phosphine 24171-89-9, Tris(2-  
 thienyl)phosphine 24850-33-7, Allyltributyltin 26464-99-3,  
 Dimethyl(trimethylsilyl)phosphine 26681-88-9, Divinylphenylphosphine  
 28609-58-7, Tris(phenylthio)stibine 28653-22-7, Trinaphthylphosphine  
 29949-75-5, Diallylphenylphosphine 29949-84-6, Tris(m-  
 methoxyphenyl)phosphine 29949-85-7, Tris(3-chlorophenyl)phosphine  
 31570-04-4, Tris(2,4-di-tert-butylphenyl) phosphite 42491-33-8,  
 tert-Butylbis(trimethylsilyl)phosphine 43077-29-8, Diphenyl-(+)-  
 neomenthylphosphine 53111-20-9, Diphenyl(2-methoxyphenyl)phosphine  
 56522-04-4, Dibenzylphosphine 63995-70-0 76189-55-4 83622-85-9,  
 Tris(3-methoxypropyl)phosphine 85417-41-0, Tris(2,6-  
 dimethoxyphenyl)phosphine 166172-69-6, Bis[3,5-  
 bis(trifluoromethyl)phenyl]phosphine 175136-62-6, Tris[3,5-  
 bis(trifluoromethyl)phenyl]phosphine 193404-80-7 216020-59-6,  
 Bis(2-furyl)phosphine 263878-91-7

RL: CAT (Catalyst use); USES (Uses)

(catalyst ligand; transition metal complexes stabilized by weakly  
 coordinating counterions for catalysts for polymerization of cycloolefins)

IT 75-16-1, Methylmagnesium bromide 124-41-4, Sodium methoxide 127-91-3,  
 β-Pinene 139362-04-2

RL: RCT (Reactant); RACT (Reactant or reagent)

(catalyst precursor; transition metal complexes stabilized by weakly  
 coordinating counterions for catalysts for polymerization of cycloolefins)

IT 100-42-5D, Styrene, crosslinked polymer

RL: CAT (Catalyst use); USES (Uses)

(catalyst support; transition metal complexes stabilized by weakly  
 coordinating counterions for catalysts for polymerization of cycloolefins)

IT 2102-16-1, Hexadeuterocyclopentadiene 25291-17-2, 1H,1H,2H-Perfluoro-1-  
 octene

RL: RCT (Reactant); RACT (Reactant or reagent)

(monomer precursor; transition metal complexes stabilized by weakly  
 coordinating counterions for catalysts for polymerization of cycloolefins)

IT 263879-07-8P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)

(monomer; transition metal complexes stabilized by weakly coordinating  
 counterions for catalysts for polymerization of cycloolefins)

IT 97-93-8, Triethylaluminum, uses 1295-35-8, Bis(cyclooctadiene)nickel  
 3375-31-3 12012-95-2, Allylpalladium chloride dimer 12107-56-1  
 12145-60-7, (Methallyl)nickel chloride dimer 13965-03-2 14024-61-4,  
 Palladium acetylacetonate 15242-92-9 18987-59-2 28425-04-9  
 29934-17-6, Bis(tricyclohexylphosphine)palladium dichloride 31989-57-8,  
 Bis(triphenylphosphine)palladium 32216-28-7, Allylplatinum chloride  
 tetramer 33309-88-5 34424-15-2 40691-33-6 42196-31-6, Palladium

trifluoroacetate 63936-77-6 63936-85-6, (1,5-Cyclooctadiene)methylpalladium chloride 125475-73-2 135348-57-1, Ferrocenium tetrakis(pentafluorophenyl)borate 141219-72-9, Palladium ethylhexanoate 172418-32-5 263878-78-0 263879-42-1 263879-43-2 263879-44-3

RL: CAT (Catalyst use); USES (Uses)

(transition metal complexes stabilized by weakly coordinating counterions for catalysts for polymerization of cycloolefins)

IT 12013-04-6P, (Allyl)palladium iodide dimer 28016-71-9P 32699-43-7P 34829-33-9P 58676-44-1P 71035-50-2P 79270-04-5P 119875-93-3P 125893-61-0P 179803-34-0P 263878-70-2P 263878-71-3P 263878-72-4P 263878-73-5P 263878-74-6P 263878-75-7P 263878-76-8P 263878-77-9P 263878-79-1P 263878-80-4P 263905-49-3P 263905-50-6P

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(transition metal complexes stabilized by weakly coordinating counterions for catalysts for polymerization of cycloolefins)

IT 25038-76-0P, Polynorbornene 25038-78-2P, Polydicyclopentadiene 26935-77-3P, Poly(5-butyl-2-norbornene) 26935-79-5P, Poly(5-hexylnorbornene) 26935-85-3P 29036-48-4P, Poly-5-ethyl-2-norbornene 118777-99-4P 146066-32-2P, Poly(5-triethoxysilyl-2-norbornene) 146066-36-6P 252338-36-6P 252338-37-7P, Butylnorbornene-5-triethoxysilylnorbornene copolymer 252338-38-8P 263878-83-7P 263878-84-8P 263878-85-9P 263878-86-0P 263878-87-1P 263878-88-2P 263878-89-3P 263878-90-6P 263878-92-8P 263878-94-0P 263878-96-2P 263878-97-3P 263878-98-4P 263878-99-5P 263879-00-1P 263879-01-2P 263879-02-3P 263879-03-4P 263879-04-5P 263879-05-6P 263879-06-7P 263879-08-9P 263879-09-0P 263879-10-3P 263879-11-4P 263879-12-5P 263880-86-0P 263905-51-7P 263905-52-8P 264133-20-2P

RL: IMF (Industrial manufacture); PREP (Preparation)

(transition metal complexes stabilized by weakly coordinating counterions for catalysts for polymerization of cycloolefins)

IT 199450-09-4 220836-13-5 220836-14-6 220836-19-1 220836-26-0 220836-29-3 220836-34-0 263880-01-9 263880-02-0 263880-03-1 263880-04-2 263880-05-3 263880-07-5 263880-09-7 263880-10-0 263880-12-2 263880-13-3 263880-14-4 263880-15-5 263880-16-6 263880-18-8 263880-19-9 263880-22-4 263880-24-6 263880-25-7 263880-28-0 263880-30-4 263880-34-8 263880-36-0 263880-38-2 263880-40-6 263880-42-8 263880-43-9 263880-45-1 263880-46-2 263880-47-3 263880-48-4 263880-49-5 263880-50-8 263880-52-0 263880-53-1 263880-54-2 263880-55-3 263880-56-4 263880-57-5 263880-58-6 263880-60-0 263880-61-1 263880-62-2 263880-63-3 263880-65-5 263880-66-6 263880-67-7 263880-68-8 263880-70-2 263880-71-3 263880-72-4 263880-73-5 263880-75-7 263880-76-8 263880-77-9 263880-78-0 263880-80-4 263880-81-5 263880-82-6 263880-83-7 263880-85-9 263880-87-1 263905-53-9 263905-54-0 263905-55-1 263905-57-3

RL: CAT (Catalyst use); USES (Uses)

(weakly coordinating counterion component; transition metal complexes having weakly coordinating counterions for catalysts for polymerization of cycloolefins)

IT 143-66-8, Sodium tetraphenylborate 1109-15-5, Tris(pentafluorophenyl)boron 2797-28-6, Lithium tetrakis(pentafluorophenyl)borate 14104-20-2, Silver tetrafluoroborate 25776-12-9, Sodium tetrakis(4-fluorophenyl)borate 26603-18-9, Sodium tetrakis(3-fluorophenyl)borate 55471-58-4 68140-33-0, Lithium tetrakis(4-fluorophenyl)borate 70083-57-7 79060-88-1, Sodium tetrakis(3,5-bis(trifluoromethyl)phenyl)borate 89171-23-3, Potassium tetrakis(pentafluorophenyl)borate 105560-52-9, Potassium tetrakis[bis(3,5-trifluoromethyl)phenyl]borate 118612-00-3; N,N-Dimethylanilinium tetrakis(pentafluorophenyl)borate 119861-51-7, Sodium tetrakis(3,5-difluorophenyl)borate 120945-63-3 121919-80-0 136040-19-2, Trityl tetrakis(pentafluorophenyl)borate 142617-68-3,

N,N-Dimethylanilinium tetrakis[bis(3,5-trifluoromethyl)phenyl]borate  
 143319-79-3 143607-32-3 144674-03-3 148354-26-1 148354-27-2,  
 Triethylsilylium tetrakis(pentafluorophenyl)borate 149213-65-0, Sodium  
 tetrakis(pentafluorophenyl)borate 153347-65-0, Lithium  
 tetrakis(3,5-bis(trifluoromethyl)phenyl)borate 156713-63-2 157475-37-1  
 160298-75-9, Silver tetrakis(4-fluorophenyl)borate 160298-76-0  
 167172-26-1 167172-28-3 172883-38-4 177716-84-6 177716-86-8  
 177716-87-9 177716-91-5 177716-92-6 177716-94-8 177716-99-3  
 177717-01-0 177717-03-2 177717-05-4 177717-08-7 177717-10-1  
 177717-12-3 188019-19-4, Thallium tetrakis[3,5-  
 bis(trifluoromethyl)phenyl]borate 188707-89-3 191101-32-3  
 220836-20-4 220836-25-9 225797-12-6 263878-81-5 263878-82-6  
 263879-13-6, Lithium tetrakis(2-fluorophenyl)borate 263879-14-7, Sodium  
 tetrakis(2-fluorophenyl)borate 263879-15-8, Silver tetrakis(2-  
 fluorophenyl)borate 263879-16-9, Thallium tetrakis(2-fluorophenyl)borate  
 263879-17-0, Lithium tetrakis(3-fluorophenyl)borate 263879-18-1, Silver  
 tetrakis(3-fluorophenyl)borate 263879-19-2, Thallium  
 tetrakis(3-fluorophenyl)borate 263879-21-6, Ferrocenium  
 tetrakis(3-fluorophenyl)borate 263879-24-9, Thallium  
 tetrakis(4-fluorophenyl)borate 263879-27-2, Lithium tetrakis(3,5-  
 difluorophenyl)borate 263879-31-8 263879-32-9 263879-33-0  
 263879-34-1 263879-35-2 263879-36-3 263879-37-4 263879-39-6  
 263879-40-9 263879-41-0 263879-45-4 263879-46-5 263879-47-6  
 263879-48-7 263879-49-8 263879-50-1 263879-51-2 263879-52-3  
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 263879-95-4 263879-96-5 263879-97-6 263879-98-7 263879-99-8  
 263880-00-8

RL: CAT (Catalyst use); USES (Uses)

(weakly coordinating counterion component; transition metal complexes  
 stabilized by weakly coordinating counterions for catalysts for

polymerization

of cycloolefins)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Goodrich Co B F; WO 9514048 A 1995 HCAPLUS
- (2) Goodrich Co B F; WO 9637529 A 1996 HCAPLUS
- (3) Goodrich Co B F; WO 9720871 A 1997 HCAPLUS
- (4) Goodrich Co B F; WO 9733198 A 1997 HCAPLUS
- (5) Goodrich Co B F; WO 9856839 A 1998 HCAPLUS
- (6) Hoechst Ag; DE 19716312 A 1998 HCAPLUS

IT 135348-57-1, Ferrocenium tetrakis(pentafluorophenyl)borate

RL: CAT (Catalyst use); USES (Uses)

(transition metal complexes stabilized by weakly coordinating  
 counterions for catalysts for polymerization of cycloolefins)

RN 135348-57-1 HCAPLUS

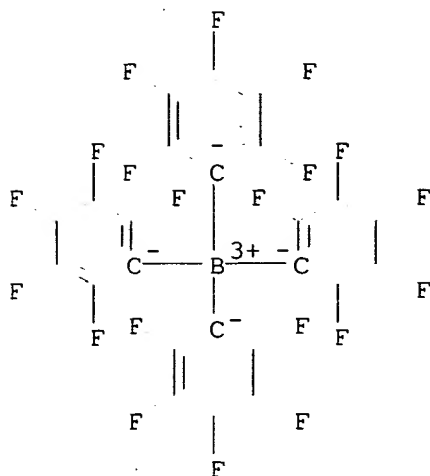
CN Ferrocenium, tetrakis(pentafluorophenyl)borate(1-) (9CI) (CA INDEX NAME)

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CRN 47855-94-7

CMF C24 B F20

CCI CCS

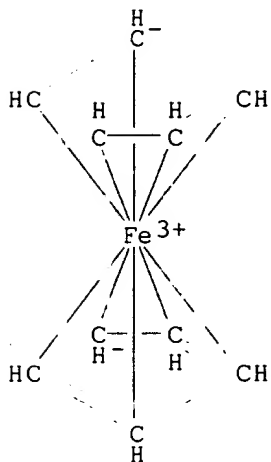


CM 2

CRN 12125-80-3

CMF C10 H10 Fe

CCI CCS



IT 263879-21-6, Ferrocenium tetrakis(3-fluorophenyl)borate

RL: CAT (Catalyst use); USES (Uses)

(weakly coordinating counterion component; transition metal complexes stabilized by weakly coordinating counterions for catalysts for

polymerization

of cycloolefins)

RN 263879-21-6 HCAPLUS

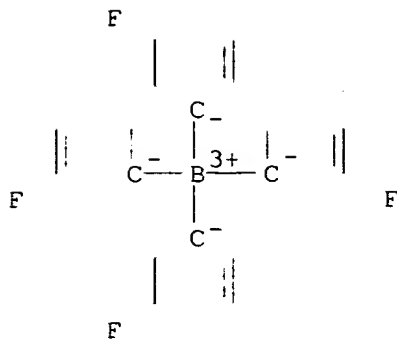
CN Ferrocenium, tetrakis(3-fluorophenyl)borate(1-) (9CI) (CA INDEX NAME)

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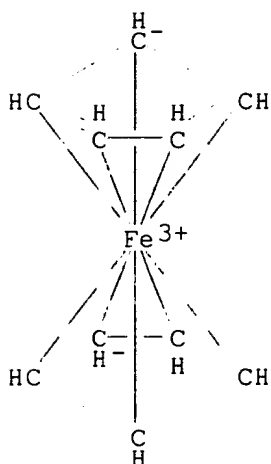


CM 2

CRN 12125-80-3

CMF C10 H10 Fe

CCI CCS



L74 ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1999:113694 HCAPLUS  
 DN 130:182881  
 ED Entered STN: 19 Feb 1999  
 TI **Crystalline ion-association substances,**  
 their manufacture and use as latent photopolymerization initiators  
 IN Hiwasa, Shin  
 PA Autex, Inc., Japan  
 SO PCT Int. Appl., 47 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 IC ICM C07F017-00  
 ICS C08F004-60; C08G059-00; C08G059-68  
 CC 35-3 (Chemistry of Synthetic High Polymers)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9906419	A1	19990211	WO 1998-JP3379	19980729 <--
	W: CA, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,				

PT, SE

JP 11049791	A2	19990223	JP 1997-219166	19970730 <--
JP 3120370	B2	20001225		
EP 1006119	A1	20000607	EP 1998-935267	19980729 <--
EP 1006119	B1	20030903		

R: BE, DE, ES, FR, GB, IT, NL, SE

US 6387975	B1	20020514	US 2000-463472	20000126 <--
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PRAI JP 1997-219166 A 19970730 <--  
 WO 1998-JP3379 W 19980729 <--

OS MARPAT 130:182881

AB A latent photopolymn. initiator comprises a **crystalline ion-association** substance represented by the formula:  

$$[(C5(R1)_n)2mMm]1+[(B(R2)4)-]1$$
 [M = central transition metal; C5 = cyclopentadienyl (I); R1 = electron-donating group connecting to C of I; n = 4 or 5; m = 1 or 2; l = 1 or 2; R2 = ligand coordinates with B atom provided that 4 of R2 have same identity]. It can polymerize a cationically polymerizable organic substance with the aid of only light irradiation without addnl. heating. It is extremely stable when stored alone or as a mixture with a cationically polymerizable organic substance. Adding decamethylferrocene 1 to concentrated H2SO4 10, mixing at room temperature for 16 h, slowly adding water (100 mL), cooling, filtering through a PTFE filter paper, stirring the filtrate while heating to 60°, adding Na tetrakis(3,5-difluorophenyl)borate 1.49 g dissolved in 5 mL EtOH, and working up gave decamethylferrocene tetrakis(3,5-difluorophenyl)borate (II). Mixing a 50% solution of Epiclone N-730A (phenol novolak epoxy resin) in MEK with 1 phr II, coating the resulting mixture on a glass to dry thickness of 50 µm, drying and irradiating with UV light at 8000 mJ/cm2 gave a cured film with hardness 2H.

ST cationic polymn initiator metallocene complex; borate complex cationic polymn epoxy resin; cyclopentadienyl complex cationic polymn epoxy resin; photopolymn initiator **cryst ion assocn** substance; ferrocene borate photopolymn initiator; latent photopolymn initiator metallocene complex

IT **Polymerization catalysts**  
 (cationic, latent photochem.; **crystalline ion-association** substances, manufacture and use as latent photopolymn. initiators)

IT **Epoxy resins, uses**  
 RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (**crystalline ion-association** substances, manufacture and use as latent photopolymn. initiators)

IT **Polymerization catalysts**  
 (metallocene, latent photochem.; **crystalline ion-association** substances, manufacture and use as latent photopolymn. initiators)

IT **Epoxy resins, uses**  
 RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (phenolic, novolak; **crystalline ion-association** substances, manufacture and use as latent photopolymn. initiators)

IT **Polymerization catalysts**  
 (photopolymn., latent cationic; **crystalline ion-association** substances, manufacture and use as latent photopolymn. initiators)

IT 220517-46-4P 220517-48-6P 220517-50-0P  
 220517-52-2P 220517-54-4P 220517-56-6P  
 220517-58-8P 220517-62-4P 220517-65-7P  
 RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
 (**crystalline ion-association** substances, manufacture and use as latent photopolymn. initiators)

IT 25085-98-7, Araldite CY 179 141092-59-3, EOCN-100  
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(**crystalline ion-association** substances, manufacture and use as latent photopolymn. initiators)

IT 147881-71-8, Epiclon N-730A  
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(**crystalline ion-association** substances, manufacture and use as latent photopolymn. initiators for)

IT 12126-50-0, Decamethylferrocene 14644-80-5 25776-12-9, Sodium tetrakis(4-fluorophenyl)borate 79060-88-1 119861-51-7 120945-63-3 220517-71-5 220517-73-7 220524-19-6  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reactant for manufacture of **crystalline ion-associ**n substances for use as latent photopolymn. initiators)

RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE

(1) Anon; CN 1042723 A  
(2) Anon; CA 1284740 C HCAPLUS  
(3) Anon; CA 2000253 A HCAPLUS  
(4) Anon; CA 2074302 A HCAPLUS  
(5) Anon; ES 2113418 T3 HCAPLUS  
(6) Anon; EP 223587 A1 HCAPLUS  
(7) Anon; DE 3677527 G  
(8) Anon; EP 368629 A1 HCAPLUS  
(9) Anon; US 4772541 A HCAPLUS  
(10) Anon; US 4954414 A HCAPLUS  
(11) Anon; US 5389700 A HCAPLUS  
(12) Anon; EP 540371 A1 HCAPLUS  
(13) Anon; US 5480918 A HCAPLUS  
(14) Anon; DE 68928233 E  
(15) Anon; DE 69223593 E  
(16) Anon; DK 8605537 A HCAPLUS  
(17) Anon; BR 8605710 A HCAPLUS  
(18) Anon; CN 8608826 A  
(19) Autex, Inc; JP 05-117311 A 1993 HCAPLUS  
(20) The Mead Corp; JP 62-143044 A 1987 HCAPLUS  
(21) The Mead Corp; JP 02-182701 A 1990 HCAPLUS

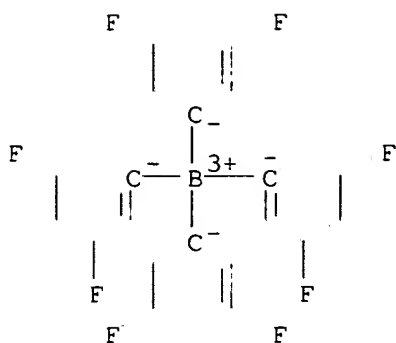
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220517-52-2P 220517-54-4P 220517-56-6P  
220517-58-8P 220517-62-4P 220517-65-7P  
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
(**crystalline ion-association** substances, manufacture and use as latent photopolymn. initiators)

RN 220517-46-4 HCAPLUS  
CN Ferrocenium, decamethyl-, tetrakis(3,5-difluorophenyl)borate(1-) (9CI)  
(CA INDEX NAME)

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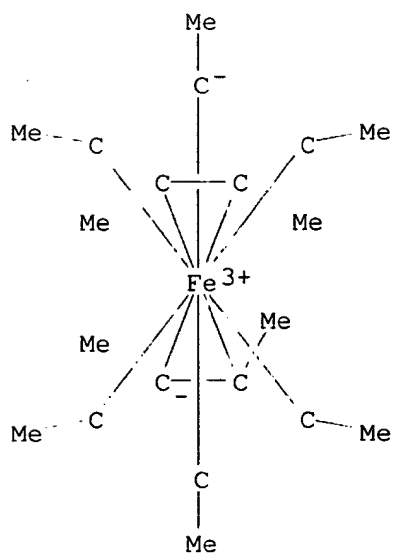
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CCI CCS





CM 2

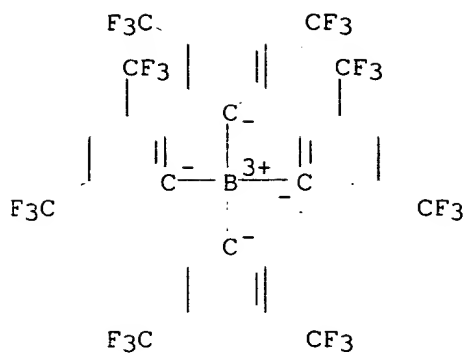
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 CMF C20 H30 Fe  
 CCI CCS



RN 220517-48-6 HCAPLUS  
 CN Ferrocenium, decamethyl-, tetrakis[3,5-bis(trifluoromethyl)phenyl]borate(1-)  
 ) (9CI) (CA INDEX NAME)

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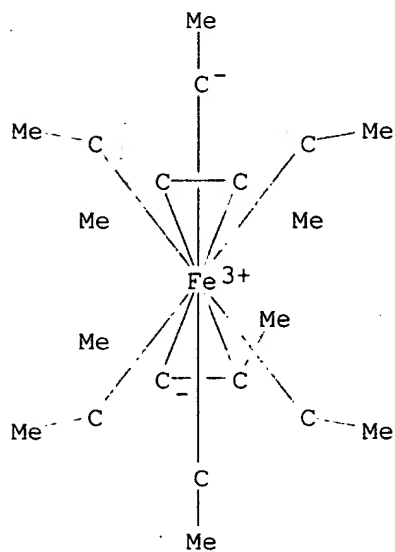


CM 2

CRN 54182-41-1

CMF C20 H30 Fe

CCI CCS



RN 220517-50-0 HCAPLUS

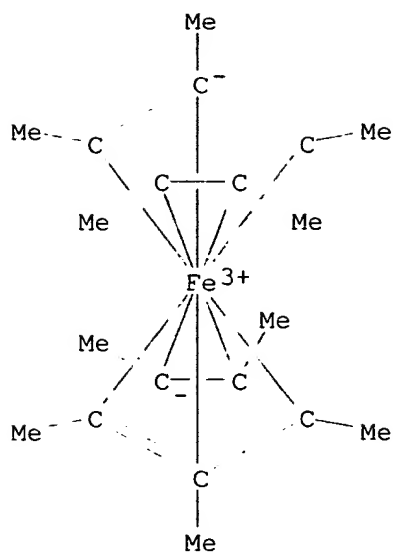
CN Ferrocenium, decamethyl-, tetrakis[4-(trifluoromethyl)phenyl]borate(1-)  
(9CI) (CA INDEX NAME)

CM 1

CRN 54182-41-1

CMF C20 H30 Fe

CCI CCS

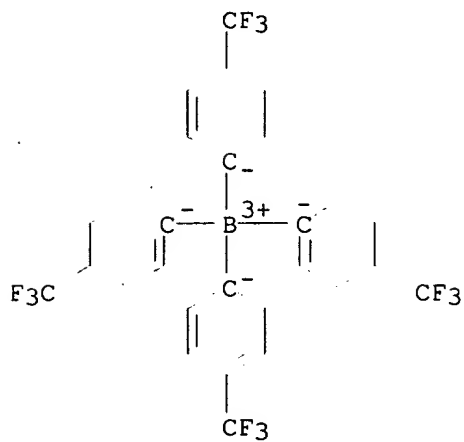


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CMF C28 H16 B F12

CCI CCS



RN 220517-52-2 HCAPLUS

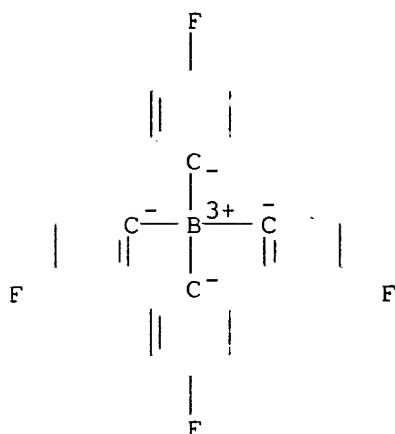
CN Ferrocenium, decamethyl-, tetrakis(4-fluorophenyl)borate(1-) (9CI) (CA INDEX NAME)

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CCI CCS

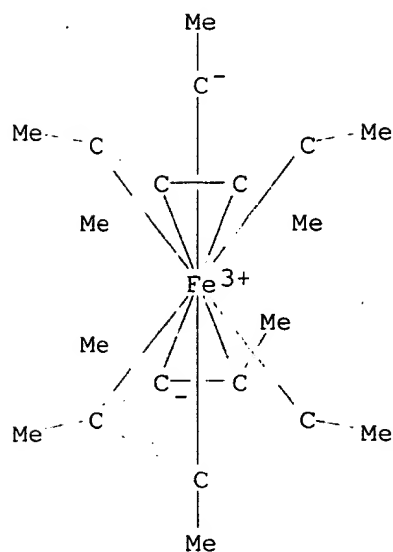


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CRN 54182-41-1

CMF C20 H30 Fe

CCI CCS



RN 220517-54-4 HCAPLUS

CN Ferrocenium, decamethyl-, tetrakis[3,5-bis(2,2,2-trifluoro-1-methoxy-1-(trifluoromethyl)ethyl)phenyl]borate(1-) (9CI) (CA INDEX NAME)

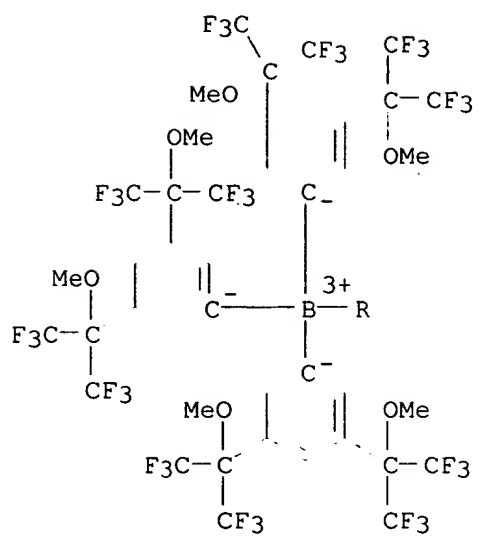
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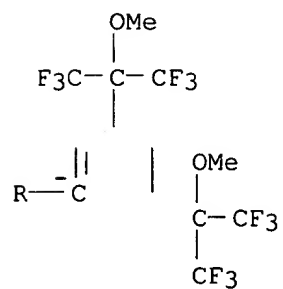
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CCI CCS

PAGE 1-A

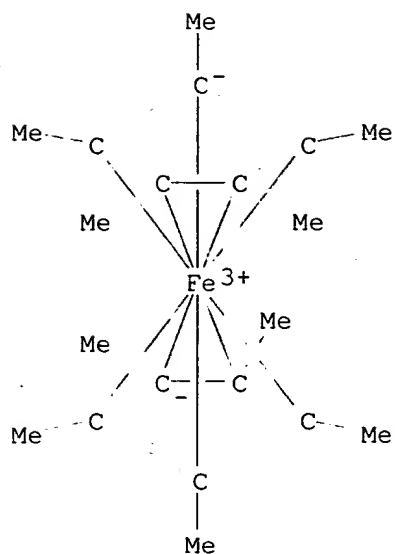


PAGE 2-A



CM 2

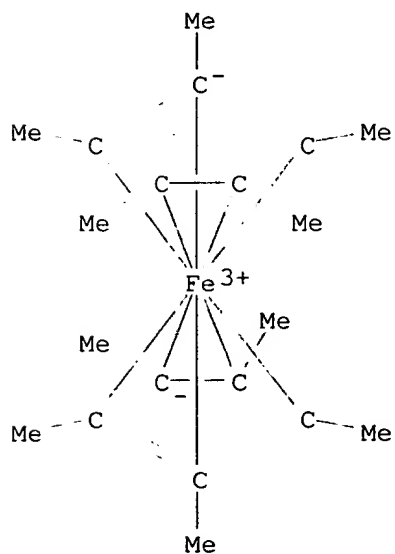
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 CMF C20 H30 Fe  
 CCI CCS



RN 220517-56-6 HCAPLUS  
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 INDEX NAME)

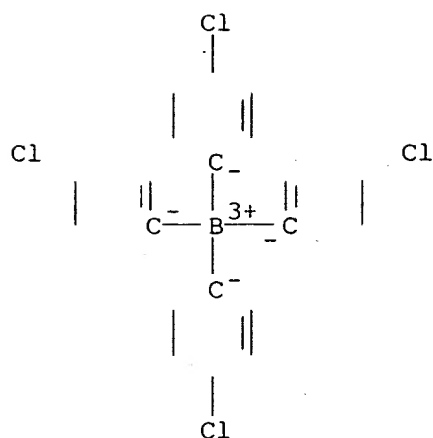
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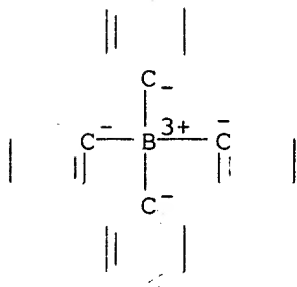
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RN 220517-58-8 HCAPLUS  
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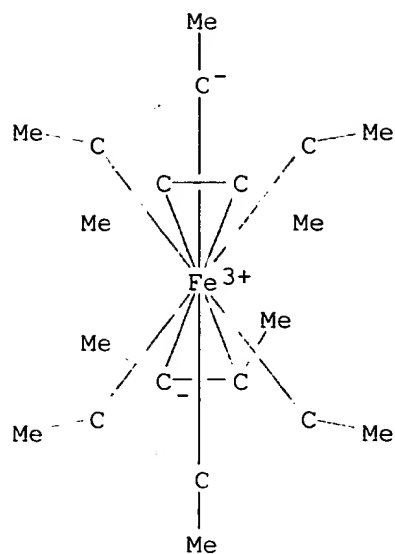
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 CCI CCS, IDS



4 ( D1- Ph )

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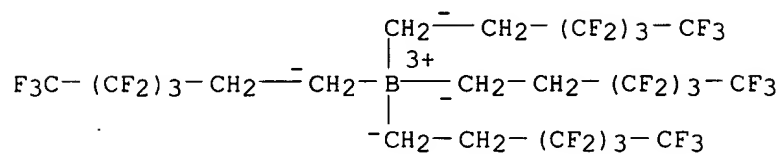
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 CCI CCS



RN 220517-62-4 HCAPLUS  
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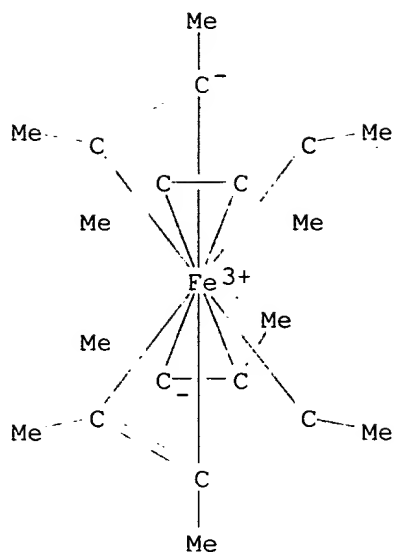
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 CCI CCS



CM 2

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 CCI CCS

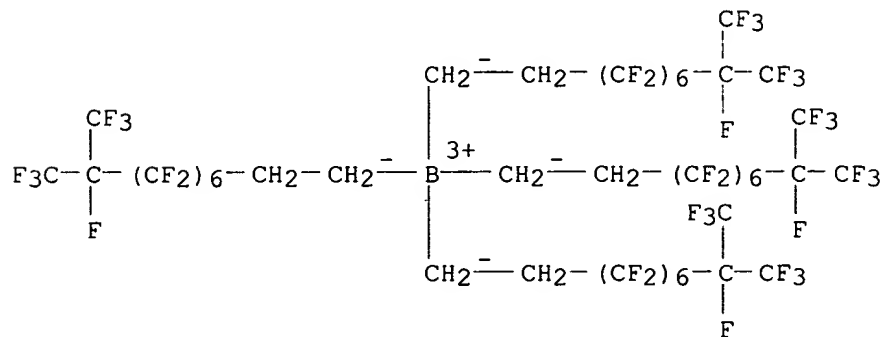




RN 220517-65-7 HCAPLUS  
 CN Ferrocenium, decamethyl-, tetrakis[3,3,4,4,5,5,6,6,7,7,8,8,9,10,10,10-hexadecafluoro-9-(trifluoromethyl)decyl]borate(1-) (9CI) (CA INDEX NAME)

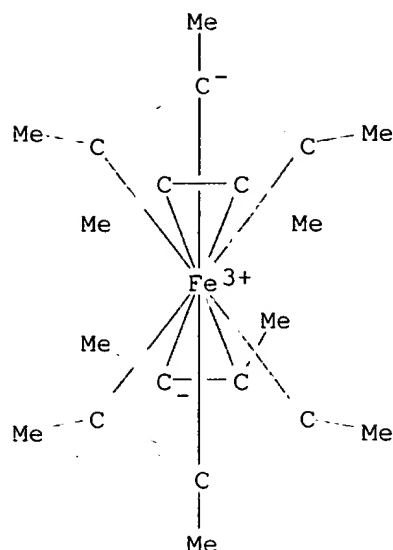
CM 1

CRN 220517-64-6  
 CMF C44 H16 B F76  
 CCI CCS



CM 2

CRN 54182-41-1  
 CMF C20 H30 Fe  
 CCI CCS



L74 ANSWER 5 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1998:485135 HCAPLUS  
 DN 129:123883  
 ED Entered STN: 04 Aug 1998  
 TI Silicone compositions cationically crosslinkable by UV light,  
 containing onium borate photoinitiators, for coating flat joints,  
 particularly cylinder head gaskets  
 IN Cotting, Marie-Christine; Joubert, Gerard; Loubet, Olivier  
 PA Rhodia Chimie, Fr.  
 SO PCT Int. Appl., 59 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA French  
 IC ICM C08K005-55  
 ICS C09K003-10; C08L083-06  
 CC 42-10 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 67

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9829498	A1	19980709	WO 1997-FR2443	19971229
	W: AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GE, HU, IL, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, TR, TT, UA, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	FR 2757870	A1	19980703	FR 1996-16378	19961230
	FR 2757870	B1	19990326		
	AU 9857691	A1	19980731	AU 1998-57691	19971229
	EP 948566	A1	19991013	EP 1997-953966	19971229
	EP 948566	B1	20020529		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI				
	BR 9714198	A	20000328	BR 1997-14198	19971229
	JP 2000508371	T2	20000704	JP 1998-529709	19971229
	JP 3192155	B2	20010723		
	AT 218155	E	20020615	AT 1997-953966	19971229
	PT 948566	T	20020930	PT 1997-97953966	19971229

	ES 2174334	T3	20021101	ES 1997-953966	19971229
	US 6423378	B1	20020723	US 1999-331783	19990830
	US 2003050418	A1	20030313	US 2002-150221	20020517
PRAI	FR 1996-16378	A	19961230		
	WO 1997-FR2443	W	19971229		
	US 1999-331783	A1	19990830		
OS	MARPAT 129:123883				
AB	The title compns. can be used for fast, economical, simple impregnation and/or coating of flat joints, especially cylinder head gaskets. A mixture of di-Me polysiloxane containing .apprx.8 mol% 2-(3,4-epoxycyclohexyl)ethyl groups (viscosity 350 mPa-s) 93.6, 4-vinyl-1,2-epoxycyclohexane 14.7, ion exchanger (Amberlite A21) 0.64, and (4-MeC6H4)2I+ B(C6F5)4- 0.0084 parts was cured by a bank of 150-W UV lamps at 11.5 m/min to give an antiblocking film with Koenig pendulum hardness 29.4.				
ST	polysiloxane coating photocurable; epoxy polysiloxane coating; catalyst crosslinking photochem; iodonium borate catalyst photocuring; onium borate catalyst photocuring; gasket coating polysiloxane photocurable				
IT	Coating materials (blocking-resistant, photocurable; silicone compns. cationically crosslinkable by UV light, containing onium borate photoinitiators, for coating flat joints, particularly cylinder head gaskets)				
IT	Polysiloxanes, uses RL: TEM (Technical or engineered material use); USES (Uses) (epoxy group-containing; silicone compns. cationically crosslinkable by UV light, containing onium borate photoinitiators, for coating flat joints, particularly cylinder head gaskets)				
IT	Onium compounds RL: CAT (Catalyst use); USES (Uses) (iodonium, tetraarylborates; silicone compns. cationically crosslinkable by UV light, containing onium borate photoinitiators, for coating flat joints, particularly cylinder head gaskets)				
IT	Crosslinking catalysts (photochem., onium borates; silicone compns. cationically crosslinkable by UV light, containing onium borate photoinitiators, for coating flat joints, particularly cylinder head gaskets)				
IT	Gaskets (photocurable; silicone compns. cationically crosslinkable by UV light, containing onium borate photoinitiators, for coating flat joints, particularly cylinder head gaskets)				
IT	Onium compounds Phosphonium compounds Quaternary ammonium compounds, uses Sulfonium compounds RL: CAT (Catalyst use); USES (Uses) (tetraarylborates; silicone compns. cationically crosslinkable by UV light, containing onium borate photoinitiators, for coating flat joints, particularly cylinder head gaskets)				
IT	10294-34-5, Boron trichloride RL: RCT (Reactant); RACT (Reactant or reagent) (reaction with bromopentafluorobenzene and butyllithium)				
IT	344-04-7, Bromopentafluorobenzene RL: RCT (Reactant); RACT (Reactant or reagent) (reaction with butyllithium and boron trichloride)				
IT	106-86-5, 3-Vinyl-7-oxabicyclo[4.1.0]heptane RL: MOA (Modifier or additive use); USES (Uses) (reactive diluent; silicone compns. cationically crosslinkable by UV light, containing onium borate photoinitiators, for coating flat joints, particularly cylinder head gaskets)				
IT	1294-92-4 153606-14-5 153606-15-6 153760-71-5 153760-73-7 153760-74-8 210290-36-1 210290-38-3				

210290-39-4 210290-40-7 210290-41-8 210290-42-9

RL: CAT (Catalyst use); USES (Uses)

(silicone compns. cationically crosslinkable by UV light,  
containing onium borate photoinitiators, for coating flat joints,  
particularly cylinder head gaskets)

IT 153699-26-4P

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);  
USES (Uses)

(silicone compns. cationically crosslinkable by UV light,  
containing onium borate photoinitiators, for coating flat joints,  
particularly cylinder head gaskets)

IT 106-86-5D, 3-Vinyl-7-oxabicyclo[4.1.0]heptane, reaction products with Me  
hydrogen polysiloxanes 156118-35-3D,  
Dimethylsilanediol-methylsilanediol copolymer, reaction  
products with vinyl epoxycyclohexane

RL: TEM (Technical or engineered material use); USES (Uses)

(silicone compns. cationically crosslinkable by UV light,  
containing onium borate photoinitiators, for coating flat joints,  
particularly cylinder head gaskets)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Rhone Poulenc Chimie; EP 0562922 A 1993 HCAPLUS
- (2) Rhone Poulenc Chimie; EP 0614958 A 1994 HCAPLUS
- (3) Rhone Poulenc Chimie; EP 0703236 A 1996 HCAPLUS
- (4) Rhone Poulenc Chimie; FR 2727416 A 1996 HCAPLUS
- (5) Three Bond Co Ltd; EP 0539234 A 1993 HCAPLUS

IT 1294-92-4 153760-71-5 153760-73-7

RL: CAT (Catalyst use); USES (Uses)

(silicone compns. cationically crosslinkable by UV light,  
containing onium borate photoinitiators, for coating flat joints,  
particularly cylinder head gaskets)

RN 1294-92-4 HCAPLUS

CN Iron(1+), ( $\eta^5$ -2,4-cyclopentadien-1-yl)[(1,2,3,4,5,6- $\eta$ )-  
methylbenzene]-, tetraphenylborate(1-) (9CI) (CA INDEX NAME)

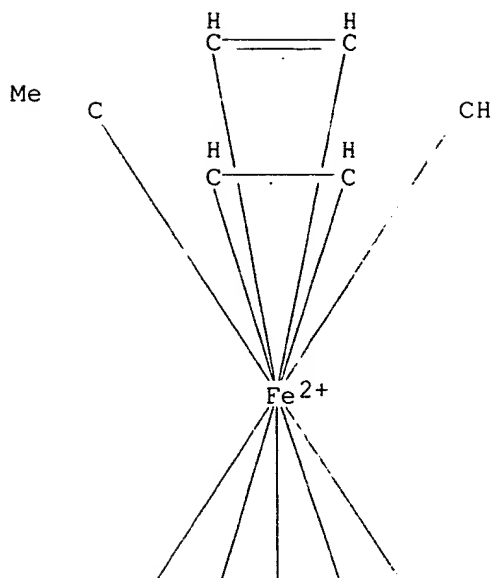
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CRN 32760-28-4

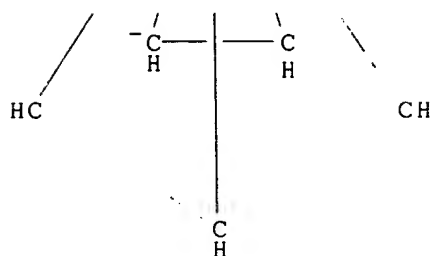
CMF C12 H13 Fe

CCI CCS

PAGE 1-A



PAGE 2-A

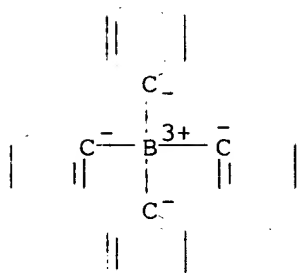


CM 2

CRN 4358-26-3

CMF C24 H20 B

CCI CCS



RN 153760-71-5 HCAPLUS  
 CN Iron(1+), ( $\eta^5$ -2,4-cyclopentadien-1-yl)[(1,2,3,4,5,6- $\eta$ )-(1-methylethyl)benzene]-, tetrakis(pentafluorophenyl)borate(1-) (9CI) (CA INDEX NAME)

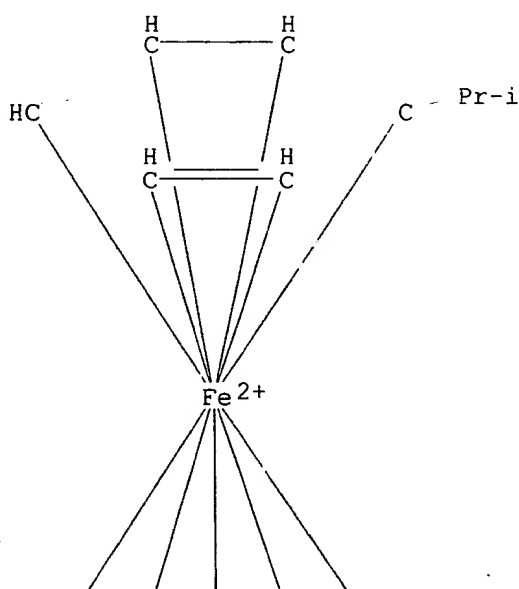
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CRN 51150-25-5

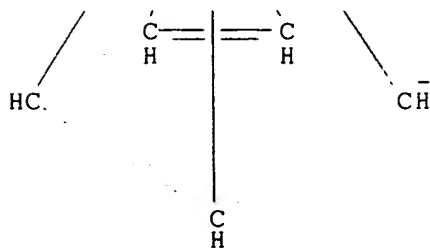
CMF C14 H17 Fe

CCI CCS

PAGE 1-A



PAGE 2-A

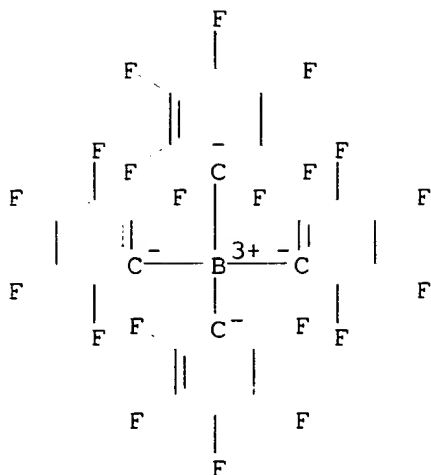


CM 2

CRN 47855-94-7

CMF C24 B F20

CCI CCS

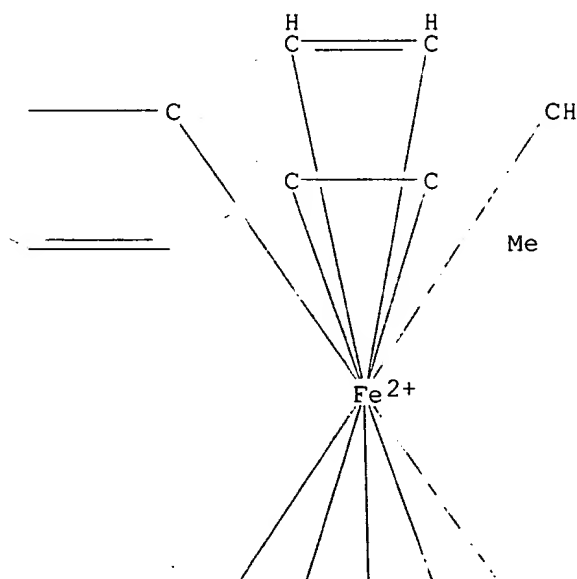


RN 153760-73-7 HCAPLUS  
 CN Iron(1+), ( $\eta^5$ -2,4-cyclopentadien-1-yl)[(1,2,3,4,4a,8a- $\eta$ )-1-methylnaphthalene]-, tetrakis(pentafluorophenyl)borate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 76545-55-6  
 CMF C16 H15 Fe  
 CCI CCS

PAGE 1-A



ST zwitterionic zirconocene alkene dimerization catalyst

IT **Crystal** structure  
Molecular structure  
(of zwitterionic zirconocene complex)

IT Dimerization  
Dimerization catalysts  
(preparation of zwitterionic zirconocene complex as  $\alpha$ -olefin dimerization catalyst)

IT Alkenes, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
( $\alpha$ -; preparation of zwitterionic zirconocene complex as  $\alpha$ -olefin dimerization catalyst)

IT 202528-16-3P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(**crystal** structure; preparation of zwitterionic zirconocene complex as  $\alpha$ -olefin dimerization catalyst)

IT 202528-08-3P  
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(preparation of zwitterionic zirconocene complex as  $\alpha$ -olefin dimerization catalyst)

IT 202528-13-0P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(preparation of zwitterionic zirconocene complex as  $\alpha$ -olefin dimerization catalyst)

IT 109-67-1, 1-Pentene 115-11-7, reactions 202528-05-0  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of zwitterionic zirconocene complex as  $\alpha$ -olefin dimerization catalyst)

IT 33717-91-8P, 2-Propyl-1-heptene 202828-66-8P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of zwitterionic zirconocene complex as  $\alpha$ -olefin dimerization catalyst)

RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Bei, X; Organometallics 1997, V16, P3282 HCAPLUS
- (2) Bochmann, M; J Chem Soc, Chem Commun 1995, P2081 HCAPLUS
- (3) Brintzinger, H; Angew Chem, Int Ed Engl 1995, V34, P1143 HCAPLUS
- (4) Chien, J; J Polym Sci A: Polym Chem 1994, V32, P2387 HCAPLUS
- (5) Christoffers, J; J Am Chem Soc 1996, V118, P4715 HCAPLUS
- (6) Deck, P; J Am Chem Soc 1995, V117, P6128 HCAPLUS
- (7) Eshuis, J; Organometallics 1992, V11, P362 HCAPLUS
- (8) Giardello, M; J Am Chem Soc 1995, V117, P12114 HCAPLUS
- (9) Guo, Z; Organometallics 1994, V13, P1424 HCAPLUS
- (10) Horton, A; Organometallics 1996, V15, P2675 HCAPLUS
- (11) Jeske, G; J Am Chem Soc 1985, V107, P8091 HCAPLUS
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- (13) Marks, T; Acc Chem Res 1992, V25, P57 HCAPLUS
- (14) Ruwwe, J; Angew Chem, Int Ed Engl 1996, V35, P80 HCAPLUS
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- (22) Thayer, A; Chem Eng News 1995, V73(3 37), P15
- (23) Thompson, M; J Am Chem Soc 1987, V109, P203 HCAPLUS
- (24) Yang, X; J Am Chem Soc 1994, V116, P10015 HCAPLUS

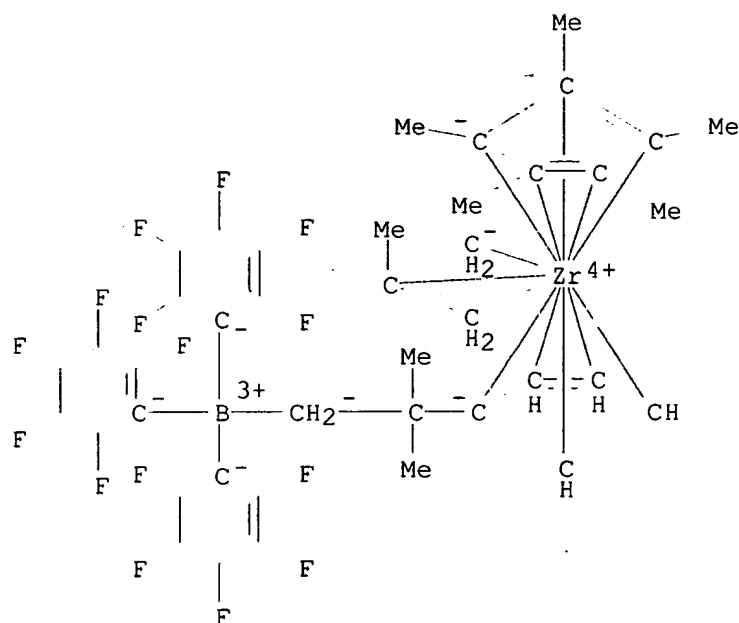
IT 202528-16-3P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(**crystal** structure; preparation of zwitterionic zirconocene complex as  $\alpha$ -olefin dimerization catalyst)



RN 202528-16-3 HCAPLUS  
 CN Zirconium, [ $\mu$ -[ $\eta$ : $\eta$ 5-2,4-cyclopentadien-1-ylidene(1,1-dimethyl-1,2-ethanediyl)]][(1,2,3- $\eta$ )-2-methyl-2-propenyl][(1,2,3,4,5- $\eta$ )-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl][tris(pentafluorophenyl)boron]-, compd. with dichloromethane (2:3) (9CI) (CA INDEX NAME)

CM 1

CRN 202528-13-0  
 CMF C41 H34 B F15 Zr  
 CCI CCS



CM 2

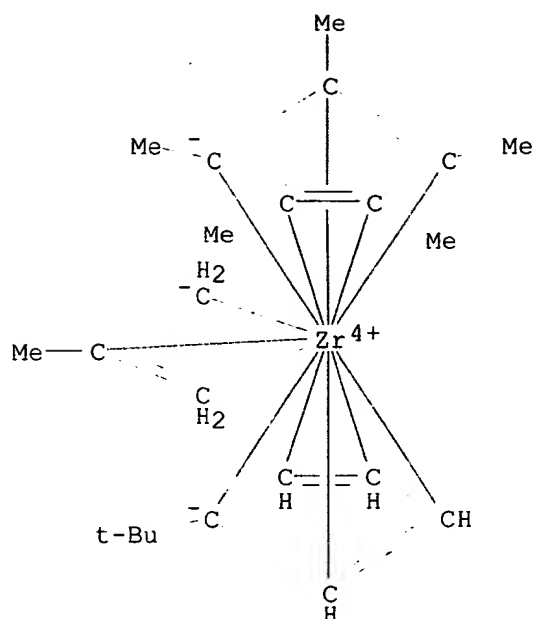
CRN 75-09-2  
 CMF C H2 Cl2

Cl-CH<sub>2</sub>-Cl

IT 202828-66-8P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of zwitterionic zirconocene complex as  $\alpha$ -olefin  
 dimerization catalyst)  
 RN 202828-66-8 HCAPLUS  
 CN Zirconium(1+), [(1,2,3,4,5- $\eta$ )-1-(1,1-dimethylethyl)-2,4-cyclopentadien-1-yl][(1,2,3- $\eta$ )-2-methyl-2-propenyl][(1,2,3,4,5- $\eta$ )-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]-, (T-4)-methyltris(pentafluorophenyl)borate(1-) (9CI) (CA INDEX NAME)

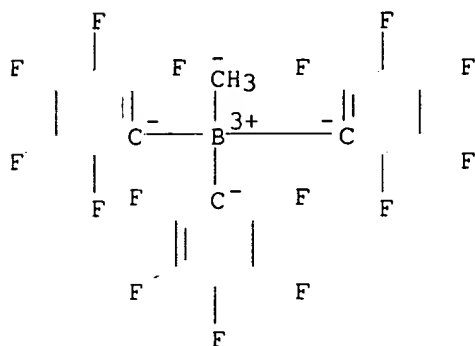
CM 1

CRN 202828-65-7  
 CMF C23 H35 Zr  
 CCI CCS



CM 2

CRN 133445-48-4  
 CMF C19 H3 B F15  
 CCI CCS



L74 ANSWER 7 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1998:59396 HCAPLUS  
 DN 128:141209  
 ED Entered STN: 31 Jan 1998  
 TI Preparation of heat-resistant **crystalline** syndiotactic styrene  
 polymers  
 IN Kinoshita, Naoshi; Iwamoto, Takashi  
 PA Asahi Chemical Industry Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C08F012-08  
 ICS C08F004-642  
 CC 35-4 (Chemistry of Synthetic High Polymers)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10017618	A2	19980120	JP 1996-191663	19960703 <--
PRAI	JP 1996-191663		19960703 <--		

AB Syndiotactic polystyrenes are prepared by polymerizing styrene (I) or its derivs.  
in the presence of catalysts comprising (A) Ti compds. CpTiF<sub>3</sub> [Cp = (substituted) cyclopentadienyl], (B) coordinated complexes comprising (i) cations, which may be N-containing cations having acid constant at 25° ≤ 7, and (ii) plural group-bonded metal anions, and (C) alkylating agents. Thus, 10 mL I was polymerized in the presence of (i-Bu)<sub>3</sub>Al 75, methylferrocenium tetra(pentafluorophenyl)borate 75, and (pentamethylcyclopentadienyl)titanium trifluoride 75 μmol at 50° for 4 h to give polystyrene with ≥97% syndiotacticity, weight-average mol. weight 260,000, and MEK insols. 99%. The polymer was mixed with 0.1% ADK Stab PEP 36 and 0.1% Irganox 1010, melted at 272°, and kept at 300° for 10 min to show no bubbling.

ST syndiotactic polystyrene prepn cyclopentadienyl titanium fluoride; coordinated complex polymn catalyst syndiotactic polystyrene; butyl aluminum polymn catalyst syndiotactic polystyrene; methylferrocenium pentafluorophenyl borate polymn catalyst; alkylating agent polymn catalyst syndiotactic polystyrene

IT Alkylation catalysts  
Heat-resistant materials  
(preparation of heat-resistant syndiotactic polystyrenes with cyclopentadienyltitanium trifluoride, coordinated complexes, and alkylating agent)

IT Coordination compounds  
RL: CAT (Catalyst use); USES (Uses)  
(preparation of heat-resistant syndiotactic polystyrenes with cyclopentadienyltitanium trifluoride, coordinated complexes, and alkylating agent)

IT Polymerization catalysts  
(stereospecific; preparation of heat-resistant syndiotactic polystyrenes with cyclopentadienyltitanium trifluoride, coordinated complexes, and alkylating agent)

IT 100-99-2, Triisobutyl aluminum, uses 63166-76-7,  
Cyclopentadienyltitanium trifluoride 118612-00-3 135104-33-5  
136040-19-2 142372-60-9, (Pentamethylcyclopentadienyl)titanium trifluoride 143607-33-4  
RL: CAT (Catalyst use); USES (Uses)  
(preparation of heat-resistant syndiotactic polystyrenes with cyclopentadienyltitanium trifluoride, coordinated complexes, and alkylating agent)

IT 28325-75-9P, Syndiotactic polystyrene  
RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)  
(preparation of heat-resistant syndiotactic polystyrenes with cyclopentadienyltitanium trifluoride, coordinated complexes, and alkylating agent)

IT 143607-33-4  
RL: CAT (Catalyst use); USES (Uses)  
(preparation of heat-resistant syndiotactic polystyrenes with cyclopentadienyltitanium trifluoride, coordinated complexes, and alkylating agent)

RN 143607-33-4 HCAPLUS

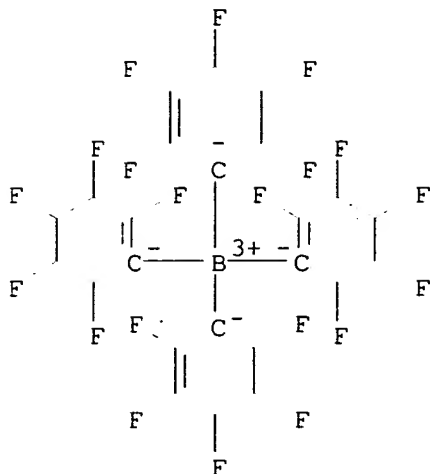
CN Ferrocenium, 1,1'-dimethyl-, tetrakis(pentafluorophenyl)borate(1-) (9CI)  
(CA INDEX NAME)

CM 1

CRN 47855-94-7

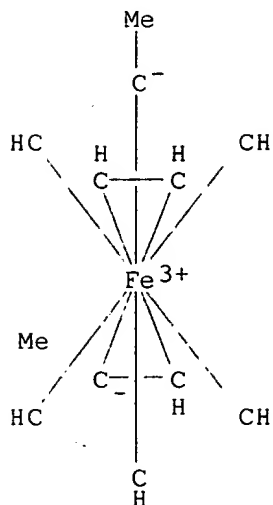
CMF C24 B F20

CCI CCS



CM 2

CRN 12276-63-0  
 CMF C12 H14 Fe  
 CCI CCS



L74 ANSWER 8 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1997:309927 HCAPLUS  
 DN 126:294214  
 ED Entered STN: 15 May 1997  
 TI Cationically photocurable epoxy resin compositions with lasting flexibility  
 IN Eckhardt, Gunther; Somnitz, Ursula  
 PA Thera Patent Gmbh & Co. Kg Gesellschaft fuer Industrielle Schutzrechte, Germany  
 SO Ger. Offen., 9 pp.  
 CODEN: GWXXBX  
 DT Patent

LA German  
 IC ICM C08L063-00  
 ICS C08K005-14; C08K005-05; C08K005-15; C09J163-00; C09D163-00;  
 C09K003-10; C08G059-62; C08G059-68  
 ICA C08J003-28; C08J003-24  
 ICI C08L063-00, C08L029-14, C08L067-00, C08L069-00, C08L071-00, C08L015-00;  
 C09D163-00, C09D129-14, C09D167-00  
 CC 37-6 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 38, 42

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19534664	A1	19970320	DE 1995-19534664	19950919
	EP 764690	A2	19970326	EP 1996-110294	19960626
	EP 764690	A3	19970611		
	EP 764690	B1	19990602		
	R: AT, CH, DE, FR, GB, IT, LI				
	AT 180817	E	19990615	AT 1996-110294	19960626
PRAI	DE 1995-19534664		19950919		

AB The title compns., useful in castings, adhesives, sealants, and coatings, contain cycloaliph. epoxides 5-95, polyols (e.g., polyesters, polycarbonates, polybutadiene polyols) with mol. weight 200-8000 and OH equivalent weight (HEW) 60-5000 1-90, metallocenium salts having complex anions with nucleophilicity no greater than that of SbF<sub>6</sub><sup>-</sup> 0.01-10, oxidative catalysts 0.001-10, polyvinyl acetals (mol. weight 5000-100,000, HEW 50-5000) 0.5-30, and conventional additives 0-60 parts. A mixture of (3,4-epoxycyclohexyl)methyl 3,4-epoxycyclohexanecarboxylate 68.1, **epoxysilane** 0.2, polycaprolactone triol (mol. weight 530) 36.8, ferrocenium hexafluoroantimonate 0.8, cumene hydroperoxide 3.0, and polyvinyl butyral (mol. weight 30,000) 2.1 parts was cured as a 100- $\mu$ m film by light to give a film with tensile strength 25.9 N/mm<sup>2</sup>, elongation 60%, and compressive shear strength in bonding glass 17.3 N/mm<sup>2</sup>.

ST **epoxy** resin cycloaliph photocurable; polyester polyol

**epoxy** resin; crosslinking catalyst **epoxy** resin;  
 ferrocenium salt catalyst crosslinking; adhesive photocurable  
**epoxy** resin; coating photocurable **epoxy** resin

IT **Epoxy resins, properties**

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(alicyclic, polymeric polyol-modified; cationically photocurable  
**epoxy** resin compns. with lasting flexibility)

IT Polyvinyl butyrals

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(blends; cationically photocurable **epoxy** resin compns. with  
 lasting flexibility)

IT Hydroperoxides

RL: CAT (Catalyst use); USES (Uses)

(catalysts for cationically photocurable **epoxy** resin compns.  
 with lasting flexibility)

IT Adhesives

Coating materials

Sealing compositions

(cationically photocurable **epoxy** resin compns. with lasting  
 flexibility)

IT Polyvinyl acetals

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(formals, blends; cationically photocurable **epoxy** resin  
 compns. with lasting flexibility)

IT Polyesters, properties

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

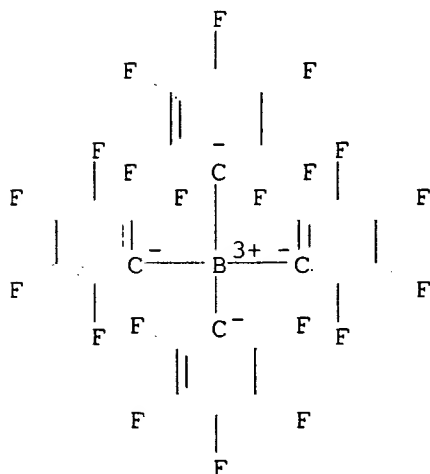
- (hydroxy-terminated, polymers with cycloaliph. epoxides; cationically photocurable **epoxy** resin compns. with lasting flexibility)
- IT **Crosslinking catalysts**  
(photochem., metallocenium salts-peroxides; catalysts for cationically photocurable **epoxy** resin compns. with lasting flexibility)
- IT Polycarbonates, properties  
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)  
(polyols, polymers with cycloaliph. epoxides; cationically photocurable **epoxy** resin compns. with lasting flexibility)
- IT 80-15-9, Cumene hydroperoxide 614-45-9, Tert-Butyl peroxybenzoate 12083-64-6, Ferrocenium hexafluoroantimonate 54873-35-7D, Titanocenium, salts with complex anions 135348-57-1, Ferrocenium tetrakis(pentafluorophenyl)borate  
RL: CAT (Catalyst use); USES (Uses)  
(catalysts for cationically photocurable **epoxy** resin compns. with lasting flexibility)
- IT 2386-87-0D, polymers with polymeric polyols 9003-17-2D, Polybutadiene, diol derivs., polymers with cycloaliph. epoxides 24980-41-4D, Polycaprolactone, triol derivs., polymers with cycloaliph. epoxides 25248-42-4D, Polycaprolactone, sru, triol derivs., polymers with cycloaliph. epoxides  
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)  
(cationically photocurable **epoxy** resin compns. with lasting flexibility)
- IT 135348-57-1, Ferrocenium tetrakis(pentafluorophenyl)borate  
RL: CAT (Catalyst use); USES (Uses)  
(catalysts for cationically photocurable **epoxy** resin compns. with lasting flexibility)
- RN 135348-57-1 HCAPLUS
- CN Ferrocenium, tetrakis(pentafluorophenyl)borate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 47855-94-7

CMF C24 B F20

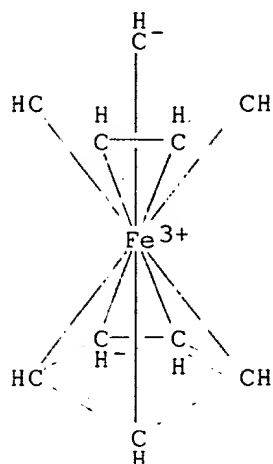
CCI CCS



CM 2

CRN 12125-80-3

CMF C10 H10 Fe  
CCI CCS



L74 ANSWER 9 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 1995:531986 HCAPLUS  
DN 122:268197  
ED Entered STN: 09 May 1995  
TI Cationically photocrosslinkable **polyorganosiloxane** compositions,  
and their use as release coatings for paper and for protecting optical  
fibers, textiles, and printed circuits.  
IN Priou, Christian  
PA Rhone-Poulenc Chimie, Fr.  
SO Eur. Pat. Appl., 9 pp.  
CODEN: EPXXDW  
DT Patent  
LA French  
IC ICM C09D183-06  
ICS C08K005-00; C08G085-00  
CC 42-3 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 43, 57, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 614958	A1	19940914	EP 1994-420079	19940309
	EP 614958	B1	19980603		
	R: BE, DE, ES, FR, GB, IE, IT, SE				
	FR 2702485	A1	19940916	FR 1993-2749	19930310
	FR 2702485	B1	19950414		
	ES 2119119	T3	19981001	ES 1994-420079	19940309
PRAI	FR 1993-2749		19930310		

OS MARPAT 122:268197

AB Title compns. contain catalysts having (L1L2L3M)<sup>q+</sup> (M = Group IVB, VB, VIB, VIIB or VIII metal, L1, L2 =  $\pi$ -bonding ligands contributing 3-8 and 6-7 electrons to M, resp., L3 = 0-3  $\sigma$ -bonding ligands selected from CO and NO<sub>2</sub><sup>+</sup>, q = 1 or 2) and (BXaRb)- (X = halo when a = 0-3 and OH when a = 0-2, R = Ph substituted by  $\geq 1$  electron-attracting group or polynuclear aryl optionally substituted by  $\geq 1$  electron-attracting group, a, b = 0-4, a + b = 4). A typical composition for coating glassine paper contained 100 parts MeSiO(SiMeRO)<sub>3</sub>(SiMe<sub>2</sub>O)<sub>30</sub>SiMe<sub>3</sub> (R = 4-ethyl-1,2-epoxy-1-cyclohexyl) and 4 parts ( $\eta$ 5-cyclopentadienyl)( $\eta$ 6-cumene)iron tetrakis(pentafluorophenyl)borate (50% Me<sub>2</sub>CO solution).  
ST cationically photocrosslinkable **siloxane** coating; fluorophenyl

borate iron catalyst photocrosslinking; cumene iron complex catalyst photocrosslinking; cyclopentadiene iron complex catalyst photocrosslinking; **epoxy siloxane** coating photocrosslinkable; printed circuit photocrosslinkable **siloxane** coating; textile photocrosslinkable **siloxane** coating; optical fiber photocrosslinkable **siloxane** coating; catalyst transition metal complex photocrosslinking; release coating paper photocrosslinkable **siloxane**

- IT **Siloxanes and Silicones, uses**  
 RL: PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)  
 (catalysts for photocrosslinking **polyorganosiloxane** coatings)
- IT Group IVB element compounds  
 Group VB element compounds  
 Group VIB element compounds  
 Group VIIB element compounds  
 Group VIII element compounds  
 RL: CAT (Catalyst use); IMF (Industrial manufacture); PRP (Properties); PREP (Preparation); USES (Uses)  
 (chelates; catalysts for photocrosslinking **polyorganosiloxane** coatings)
- IT Optical fibers  
 Textiles  
 (substrates; catalysts for photocrosslinking **polyorganosiloxane** coatings)
- IT Synthetic fibers, polymeric  
 RL: MSC (Miscellaneous)  
 (substrates; catalysts for photocrosslinking **polyorganosiloxane** coatings)
- IT Paper  
 (glassine, substrate; catalysts for photocrosslinking **polyorganosiloxane** coatings)
- IT **Crosslinking catalysts**  
 (photochem., transition metal complexes; catalysts for photocrosslinking **polyorganosiloxane** coatings)
- IT Electric circuits  
 (printed, substrates; catalysts for photocrosslinking **polyorganosiloxane** coatings)
- IT Parting materials  
 (release coatings, catalysts for photocrosslinking **polyorganosiloxane** coatings)
- IT 153760-71-5P 153760-72-6P 153760-73-7P  
 RL: CAT (Catalyst use); IMF (Industrial manufacture); PRP (Properties); PREP (Preparation); USES (Uses)  
 (catalysts for photocrosslinking **polyorganosiloxane** coatings)
- IT 158521-03-0D, trimethylsilyl-terminated  
 RL: PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)  
 (catalysts for photocrosslinking **polyorganosiloxane** coatings)
- IT 149213-65-0, Sodium tetrakis(pentafluorophenyl)borate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with (cyclopentadienyl)(toluene)iron hexafluorophosphate)
- IT 102-54-5, Ferrocene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with cumene)
- IT 98-82-8, Cumene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with ferrocene)
- IT 89171-23-3, Potassium tetrakis(pentafluorophenyl)borate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with product of cumene and ferrocene)
- IT 33435-42-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)

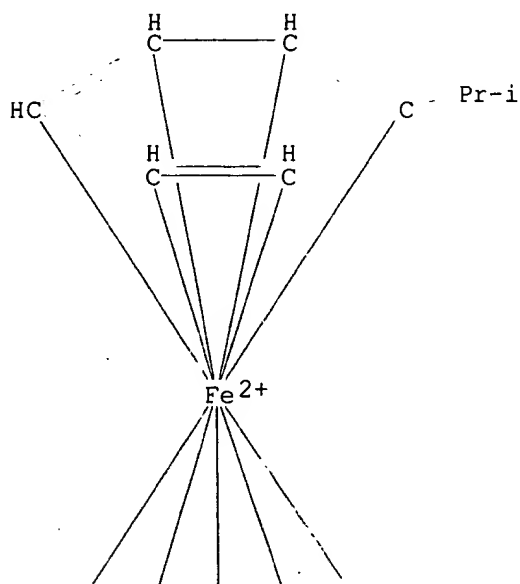


(reaction with sodium tetrakis(pentafluorophenyl)borate)  
 IT 153760-71-5P 153760-72-6P 153760-73-7P  
 RL: CAT (Catalyst use); IMF (Industrial manufacture); PRP (Properties);  
 PREP (Preparation); USES (Uses)  
 (catalysts for photocrosslinking polyorganosiloxane coatings)  
 RN 153760-71-5 HCAPLUS  
 CN Iron(1+), ( $\eta^5$ -2,4-cyclopentadien-1-yl)[(1,2,3,4,5,6- $\eta$ )-(1-methylethyl)benzene]-, tetrakis(pentafluorophenyl)borate(1-) (9CI) (CA INDEX NAME)

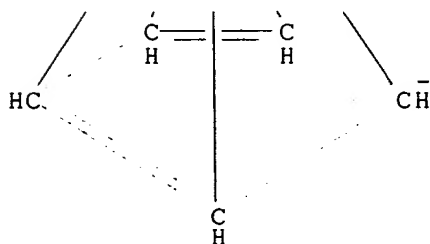
CM 1

CRN 51150-25-5  
 CMF C14 H17 Fe  
 CCI CCS

PAGE 1-A



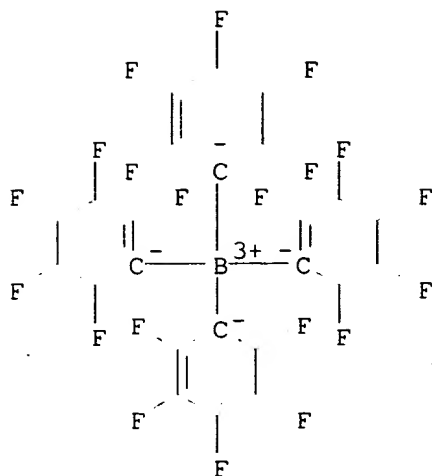
PAGE 2-A



CM 2

CRN 47855-94-7

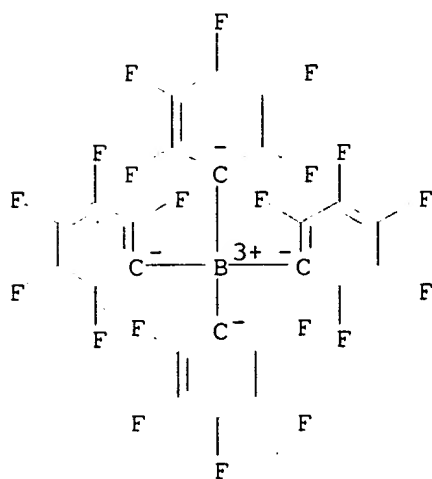
CMF C24 B F20  
CCI CCS



RN 153760-72-6 HCAPLUS  
CN Iron(1+), ( $\eta^5$ -2,4-cyclopentadien-1-yl)[(1,2,3,4,5,6- $\eta$ -methylbenzene)-, tetrakis(pentafluorophenyl)borate(1-) (9CI) (CA INDEX NAME)

CM 1

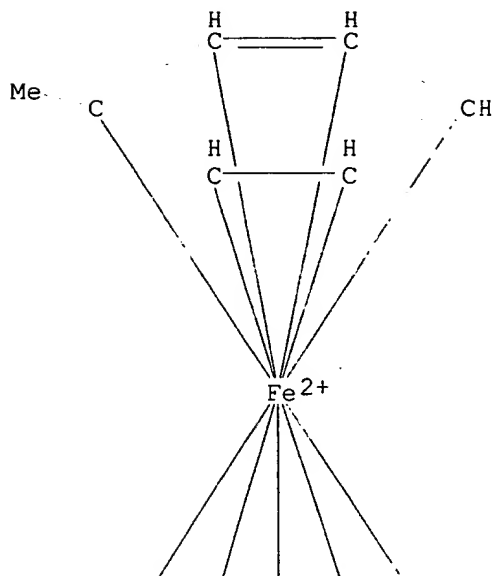
CRN 47855-94-7  
CMF C24 B F20  
CCI CCS



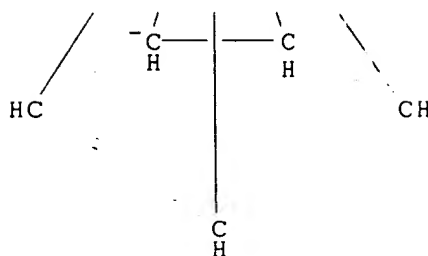
CM 2

CRN 32760-28-4  
CMF C12 H13 Fe  
CCI CCS

PAGE 1-A



PAGE 2-A



RN 153760-73-7 HCAPLUS  
 CN Iron(1+), ( $\eta^5$ -2,4-cyclopentadien-1-yl)[(1,2,3,4,4a,8a- $\eta$ )-1-methylnaphthalene]-, tetrakis(pentafluorophenyl)borate(1-) (9CI) (CA INDEX NAME)

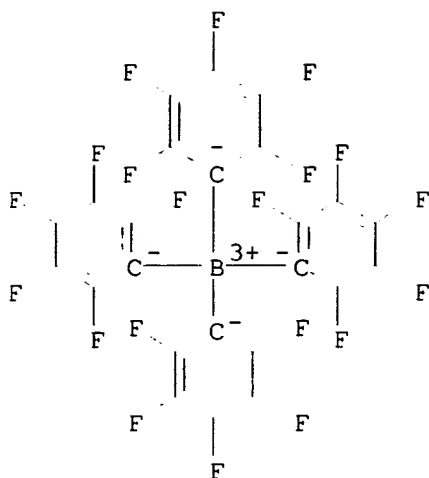
CM 1

CRN 76545-55-6

CMF C16 H15 Fe

CCI CCS





L74 ANSWER 10 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1991:633214 HCAPLUS

DN 115:233214

ED Entered STN: 29 Nov 1991

TI Crosslinked syndiotactic polymers from functional arylcyclobutenes

IN Campbell, Richard E., Jr.; DeVries, Robert A.

PA Dow Chemical Co., USA

SO Can. Pat. Appl., 27 pp.

CODEN: CPXXEB

DT Patent

LA English

IC ICM C08F112-32

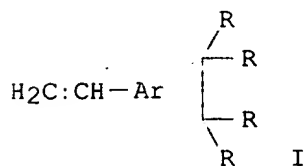
CC 35-7 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 67

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CA 2026531	AA	19910330	CA 1990-2026531	19900928 <--
	US 5077367	A	19911231	US 1990-541455	19900622 <--
	EP 425814	A1	19910508	EP 1990-118390	19900925 <--
	EP 425814	B1	19980617		
	R: AT, BE, CH, DE, FR, GB, IT, LI, NL, SE				
	AT 167491	E	19980715	AT 1990-118390	19900925 <--
	JP 03185006	A2	19910813	JP 1990-258800	19900927 <--
PRAI	US 1989-414842		19890929	<--	
	US 1990-541455		19900622	<--	

GI



AB **Crystalline** polymers with >50% syndiotacticity, useful for extrusion and molding, are prepared by coordination polymerization of the arylcyclobutenes I

(Ar = C6-20 arenetriyl with ortho CR<sub>2</sub> substituents; R = H, electropos., or

electroneg. group;  $m \geq 1$ ), optionally with vinylarom. compds., in the presence of catalysts from transition metals and aluminoxanes or metallocenes. Thus, heating 4-vinylbenzocyclobutene, Me aluminoxane, and iso-Bu<sub>3</sub>Al in PhMe at 70° for 15 min, adding pentamethylcyclopentadienyltitanium triphenoxide, and heating at 70° for 16 h gave 19.2% polymer (<50% syndiotacticity), which was crosslinked at 160° for 6 h to give a hard, insol. solid.

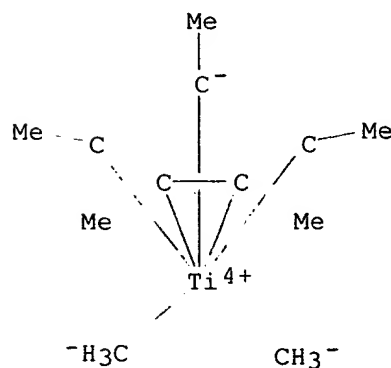
- ST vinylbenzocyclobutene polymn catalyst; titanocene catalyst polymn; aluminoxane catalyst polymn; aluminum alkyl catalyst polymn; catalyst polymn arylcyclobutene; metallocene catalyst polymn
- IT Aluminoxanes  
RL: CAT (Catalyst use); USES (Uses)  
(catalysts, for polymerization of vinylcyclobutenes)
- IT Aluminoxanes  
RL: CAT (Catalyst use); USES (Uses)  
(Me, catalysts, for polymerization of vinylcyclobutenes)
- IT **Polymerization catalysts**  
(coordination, stereospecific, metallocenes, aluminoxanes and alanes, for vinylbenzocyclobutenes)
- IT Transition metals, compounds  
RL: CAT (Catalyst use); USES (Uses)  
(sandwich compds., catalysts, for polymerization of vinylcyclobutenes)
- IT 100-99-2, uses and miscellaneous 36523-12-3  
RL: CAT (Catalyst use); USES (Uses)  
(catalysts, for polymerization of vinylbenzocyclobutenes)
- IT 135072-60-5  
RL: CAT (Catalyst use); USES (Uses)  
(catalysts, for polymerization of vinylcyclobutenes)
- IT 137021-22-8P 137021-23-9P  
RL: PREP (Preparation)  
(preparation of, catalysts for)
- IT 135072-60-5  
RL: CAT (Catalyst use); USES (Uses)  
(catalysts, for polymerization of vinylcyclobutenes)
- RN 135072-60-5 HCAPLUS
- CN Titanium(1+), dimethyl[(1,2,3,4,5- $\eta$ )-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]-, tetrakis(pentafluorophenyl)borate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 135072-59-2

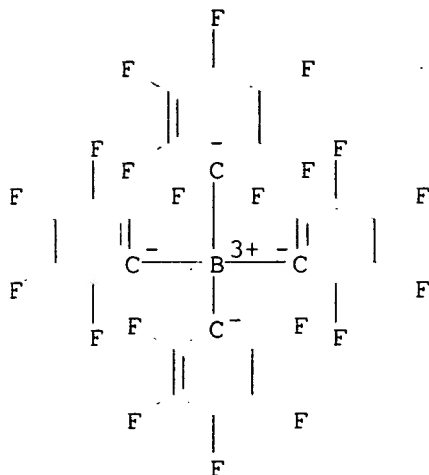
CMF C12 H21 Ti

CCI CCS



CM 2

CRN 47855-94-7  
CMF C24 B F20  
CCI CCS



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(FILE 'REGISTRY' ENTERED AT 09:11:15 ON 08 JAN 2004)

FILE 'HCAPLUS' ENTERED AT 09:11:29 ON 08 JAN 2004

L75 5 S (CN1042723 OR CA1284740 OR CA2000253 OR CA2074302 OR ES211341  
L76 2 S (EP673946 OR JP841088 OR US5521265 OR JP11152295 OR EP897926  
L77 1 S KLIMOVA ?/AU AND 1998/PY AND (559 AND 43)/SO AND J ORGANOMET  
L78 8 S L74-L77 NOT L74  
L79 5 S L78 AND L1-L11, L34-L74  
L80 8 S L78, L79  
SEL RN

FILE 'REGISTRY' ENTERED AT 09:17:54 ON 08 JAN 2004

L81 205 S E19-E223  
L82 31 S L81 AND B/ELS  
L83 17 S L81 AND L21  
L84 14 S L82 NOT L83

FILE 'HCAPLUS' ENTERED AT 09:19:11 ON 08 JAN 2004

L85 3 S L83 AND L80  
L86 8 S L80, L85

=> d all hitstr tot

L86 ANSWER 1 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 1999:712432 HCAPLUS  
DN 131:288449  
ED Entered STN: 09 Nov 1999  
TI Manufacture of potassium sulfate by extraction using  
IN Xie, Hongyang; Xie, Hu  
PA Peop. Rep. China  
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 8 pp.  
CODEN: CNXXEV  
DT Patent  
LA Chinese

*Fig 1: from  
applicant's  
ated references*

IC ICM C01D005-02

ICS B01D011-00; C01C001-245

CC 49-5 (Industrial Inorganic Chemicals)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CN 1138557	A	19961225	CN 1996-115366	19960607 <--
	CN 1042723	B	19990331		
PRAI	CN 1996-115366		19960607		

OS MARPAT 131:288449

AB The process comprises: reaction of industrial H<sub>2</sub>SO<sub>4</sub> and KCl to obtain acid potassium sulfate, reaction of the acid K<sub>2</sub>SO<sub>4</sub> and compound neutralizing-extracting agent at 10-100° for 2-60 min to an acid value <5 mg KOH/g, and cooling, filtering and drying to obtain solid K<sub>2</sub>SO<sub>4</sub>. NH<sub>3</sub> (or NH<sub>4</sub>OH) is added to the organic phase to obtain byproduct (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> and recover the extracting agent. The extracting agent comprises R'3N 1-3, MR" 1-2 and

MR' 0.1-1 parts, where R' is -C<sub>5</sub>-10H<sub>11</sub>-21, R" is -C<sub>5</sub>-20H<sub>11</sub>-40, M is -H, -OH, acetyl, ethoxycarbonyl. The mol ratio of R'3N to acid K<sub>2</sub>SO<sub>4</sub> is 1.1-3:1.

ST potassium sulfate manuf amine extn

IT Alkanes, properties

RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)

(C<sub>5</sub>-20, extracting agent containing; manufacture of potassium sulfate by extraction using organic amines)

IT Amines, properties

RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)

(extracting agent containing C<sub>5</sub>-10; manufacture of potassium sulfate by extraction using organic amines)

IT Extraction

(manufacture of potassium sulfate by extraction using organic amines)

IT 111-87-5, Octyl alcohol, properties

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)

(extracting agent containing; in manufacture of potassium sulfate by extraction using organic amines)

IT 7778-80-5P, Potassium sulfate, preparation

RL: IMF (Industrial manufacture); PREP (Preparation)

(manufacture of potassium sulfate by extraction using organic amines)

IT 7783-20-2, Ammonium sulfate, uses

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(manufacture of potassium sulfate by extraction using organic amines)

IT 7447-40-7, Potassium chloride, processes 7646-93-7, Acid potassium sulfate 7664-93-9, Sulfuric acid, processes

RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(manufacture of potassium sulfate by extraction using organic amines)

L86 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1999:127114 HCAPLUS

DN 130:182884

ED Entered STN: 26 Feb 1999

TI Mono- and polynuclear transition metal complexes with pentalene ligands bound to a single metal atom, their preparation and use in olefin polymerization

IN Jonas, Klaus; Kolb, Peter; Kollbach, Guido

PA Studiengesellschaft Kohle m.b.H., Germany

SO Ger. Offen., 9 pp.

CODEN: GWXXBX



DT Patent  
 LA German  
 IC ICM C07F017-00  
 ICS C08F004-642; C08F004-68; C08F004-69  
 CC 35-3 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 29

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19735259	A1	19990218	DE 1997-19735259	19970814 <--
	US 5959132	A	19990928	US 1997-933205	19970917 <--
	EP 897926	A1	19990224	EP 1998-114782	19980806 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 11152295	A2	19990608	JP 1998-228922	19980813 <--
PRAI	DE 1997-19735259		19970814	<--	
OS	MARPAT 130:182884				
AB	The complexes, highly active (especially the Zr complexes) in conjunction with Me aluminoxane in polymerization of ethylene, contain $\geq 1$ transition metal and $\geq 1$ (un)substituted pentalene ligand coordinated to a single metal atom. Thus, zirconocene dichloride in THF was treated with twice the molar amount of the di-Li salt of dihydropentalene for 10 h at room temperature to give 88% bis( $\eta 8$ -pentalene)zirconium, which was disproportionated with $ZrCl_4$ in THF at $\leq 45^\circ$ to provide dichloro( $\eta 8$ -pentalene)bis(THF)zirconium (I) in 75% yield. Polymerization of ethylene at $30^\circ/2$ bars in 300 mL toluene containing 49 $\mu$ mol I and 12.99 mmol (as Al) Me aluminoxane produced polyethylene at the rate of 458 g/g Zr-h.				
ST	pentalene transition metal complex; zirconium pentalene complex polymn catalyst; metallocene polymn catalyst pentalene analog				
IT	Aluminoxanes				
	RL: CAT (Catalyst use); USES (Uses) (Me, cocatalyst; transition metal complexes with pentalene ligands as olefin polymerization catalysts)				
IT	<b>Polymerization catalysts</b> (metallocene; transition metal complexes with pentalene ligands as olefin polymerization catalysts)				
IT	Polyolefins				
	RL: IMF (Industrial manufacture); PREP (Preparation) (transition metal complexes with pentalene ligands as olefin polymerization catalysts)				
IT	196815-30-2P	220622-00-4P	220622-04-8P		
	RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses) (preparation of transition metal complexes with pentalene ligands)				
IT	1291-32-3, Zirconocene dichloride	12701-79-0,			
	Chlorobis(cyclopentadienyl)vanadium	33152-17-9, Cyclopentadienyltitanium			
	dichloride	85870-33-3	164468-57-9		
	RL: RCT (Reactant); RACT (Reactant or reagent) (preparation of transition metal complexes with pentalene ligands)				
IT	196815-08-4P	196815-11-9P	196815-13-1P	220622-01-5P	
	RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (preparation of transition metal complexes with pentalene ligands)				
IT	196815-09-5P	196815-10-8P	196815-12-0P	196815-16-4P	196815-19-7P
	196815-22-2P	196815-25-5P	196815-81-3P	196815-86-8P	196815-91-5P
	196815-98-2P	205108-46-9P	220621-63-6P	220621-64-7P	220621-65-8P
	220621-66-9P	220621-67-0P	220621-68-1P	220621-69-2P	220621-70-5P
	220621-71-6P	220621-72-7P	220621-73-8P	220621-74-9P	220621-75-0P
	220621-76-1P	220621-77-2P	220621-78-3P	220621-79-4P	220621-80-7P
	220621-81-8P	220621-82-9P	220621-83-0P	220621-84-1P	220621-85-2P
	220621-86-3P	220621-87-4P	220621-88-5P	220621-89-6P	
	220621-91-0P	220621-93-2P	220621-95-4P		

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220622-05-9P	220622-06-0P	220622-08-2P	220622-10-6P	
220622-12-8P	220622-13-9P	220622-14-0P	220622-15-1P	
220622-16-2P	220622-17-3P	220622-18-4P	220622-19-5P	220622-20-8P
220622-21-9P	220622-22-0P	220622-23-1P	220622-25-3P	
220622-26-4P	220622-27-5P	220622-28-6P	220622-29-7P	

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of transition metal complexes with pentalene ligands)

IT 9002-88-4P

RL: IMF (Industrial manufacture); PREP (Preparation)  
(transition metal complexes with pentalene ligands as olefin polymerization catalysts)

IT 220621-91-0P 220621-93-2P 220621-95-4P  
220622-08-2P 220622-10-6P 220622-12-8P  
220622-23-1P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of transition metal complexes with pentalene ligands)

RN 220621-91-0 HCAPLUS

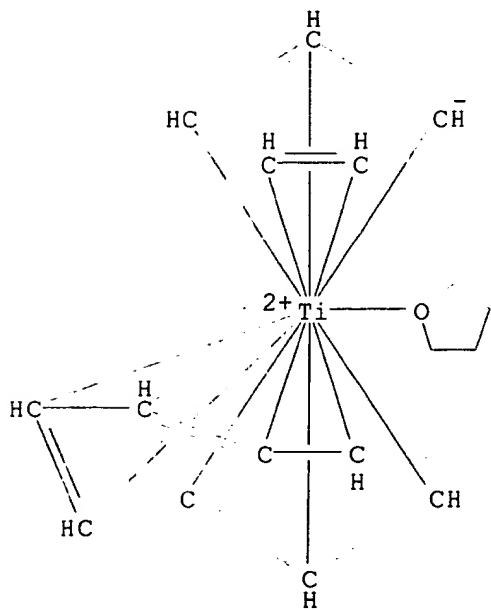
CN	Titanium(1+), (η5-2,4'-cyclopentadien-1-yl)(η8-pentalene)(tetrahydrofuran)-, tetraphenylborate(1-) (9CI) (CA INDEX NAME)
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CM 1

CRN 220621-90-9

CMF C17 H19 O Ti

CCI CCS

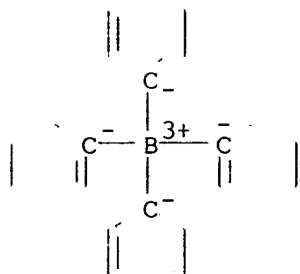


CM 2

CRN 4358-26-3

CMF C24 H20 B

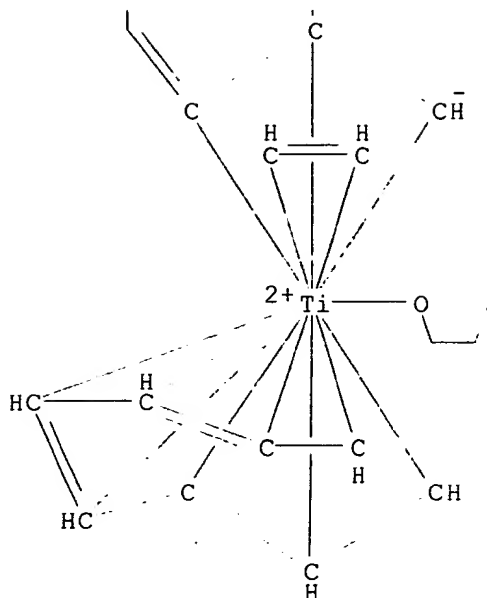
CCI CCS



RN 220621-93-2 HCAPLUS  
 CN Titanium(1+), [(1,2,3,3a,7a-η)-1H-inden-1-yl](η8-pentalene)(tetrahydrofuran)-, tetraphenylborate(1-) (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 220621-92-1  
 CMF C21 H21 O Ti  
 CCI CCS

PAGE 1-A

PAGE 2-A

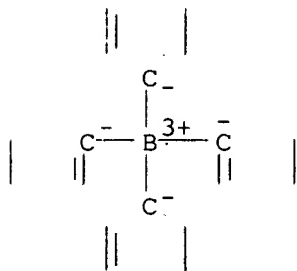


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CRN 4358-26-3

CMF C24 H20 B

CCI CCS



RN 220621-95-4 HCAPLUS

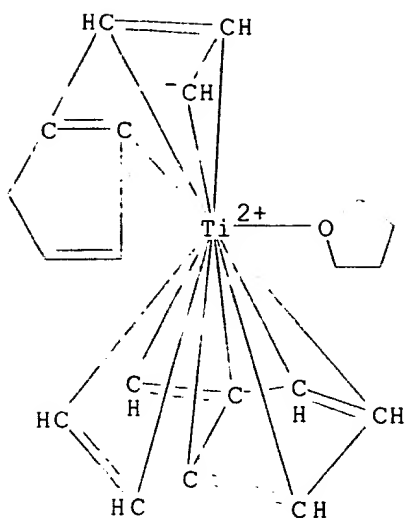
CN Titanium(1+), [(1,2,3,3a,6a-η)-1,4-dihydro-1-pentalenyl](η8-pentalene)(tetrahydrofuran)-, tetraphenylborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 220621-94-3

CMF C20 H21 O Ti

CCI CCS

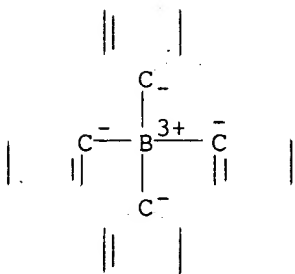


CM 2

CRN 4358-26-3

CMF C24 H20 B

CCI CCS



RN 220622-08-2 HCAPLUS

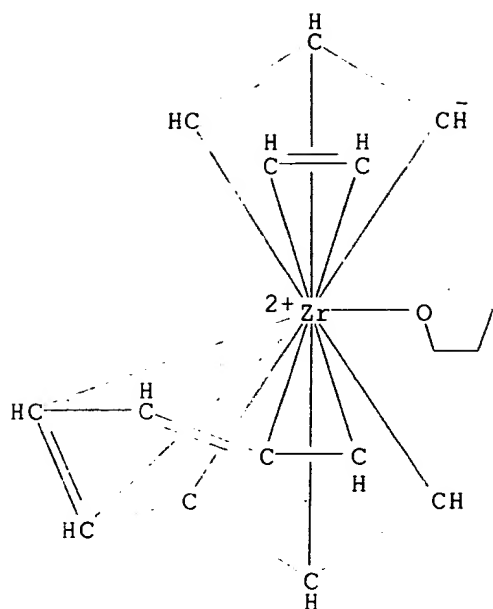
CN Zirconium(1+), ( $\eta^5$ -2,4-cyclopentadien-1-yl)( $\eta^8$ -pentalene)(tetrahydrofuran)-, tetraphenylborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 220622-07-1

CMF C17 H19 O Zr

CCI CCS

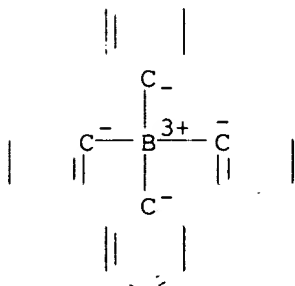


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CRN 4358-26-3

CMF C24 H20 B

CCI CCS



RN 220622-10-6 HCAPLUS

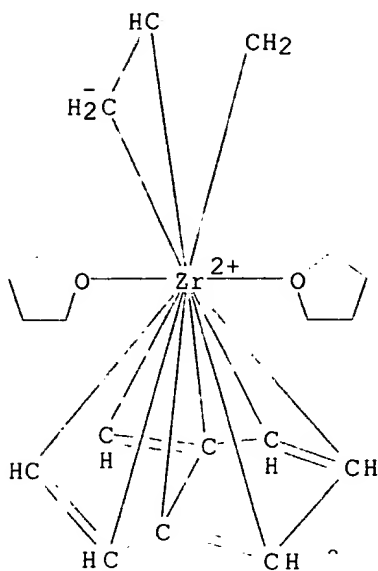
CN Zirconium(1+), ( $\eta^8$ -pentalene)( $\eta^3$ -2-propenyl)bis(tetrahydrofuran)-, tetraphenylborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 220622-09-3

CMF C19 H27 O2 Zr

CCI CCS

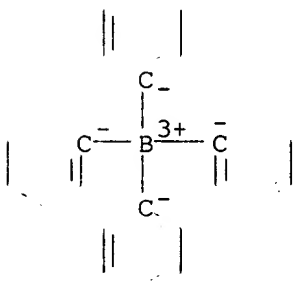


CM 2

CRN 4358-26-3

CMF C24 H20 B

CCI CCS



RN 220622-12-8 HCAPLUS

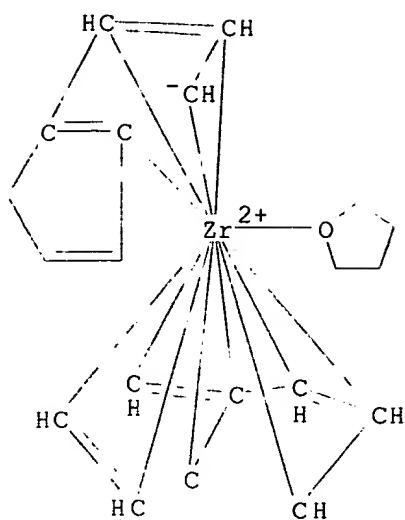
CN Zirconium(1+), [(1,2,3,3a,6a-η)-1,4-dihydro-1-pentalenyl] (η8-pentalene)(tetrahydrofuran)-, tetraphenylborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 220622-11-7

CMF C20 H21 O Zr

CCI CCS

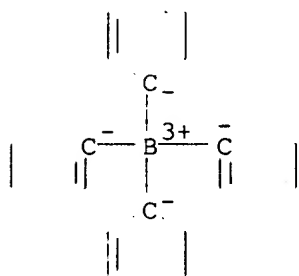


CM 2

CRN 4358-26-3

CMF C24 H20 B

CCI CCS



RN 220622-23-1 HCAPLUS

CN Zirconium, dichlorobis[(1,2,3,3a,6a-η)-4-(diethylboryl)-1,4-dihydro-1-pentalenyl]- (9CI) (CA INDEX NAME)



hydroxyallyl and crotyl carbocations with a fixed s-cis-conformation. Qual. preliminary results of biol. activity are reported, indicating high antiviral (relative to smallpox, tick caused encephalitis, type I and II herpes viruses) and antistaphylococcus activity for some of the compds.; moreover, the E isomers are more active than the Z isomers.

- ST ferrocenylmethylene carbocycle heterocycle prepn isomerization; arylidenequinuclidinone prepn isomerization; isomerization arylidenequinuclidinone ferrocenylmethylene carbocycle heterocycle; carbocation intermediacy isomerization ferrocenylmethylene carbocycle heterocycle; antiviral activity ferrocenylmethylenequinuclidine deriv; antistaphylococcus activity ferrocenylmethylenequinuclidine deriv; quinuclidine ferrocenylmethylene prepn isomerization biol activity
- IT Structure-activity relationship  
(antiviral; of ferrocenylmethylene- carbo- and heterocycles)
- IT Structure-activity relationship  
(bactericidal; of ferrocenylmethylene- carbo- and heterocycles)
- IT Isomerization  
(cis-trans; mutual Z-/E-isomerization of ferrocenylmethylene- and arylidene-substituted carbo- and heterocycles)
- IT Antibacterial agents  
Antiviral agents  
(ferrocenylmethylene- carbo- and heterocycles as)
- IT Carbocations  
RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); RCT (Reactant); FORM (Formation, nonpreparative); PROC (Process); RACT (Reactant or reagent)  
(mutual Z-/E-isomerization of ferrocenylmethylene- and arylidene-substituted carbo- and heterocycles involving intermediacy of)
- IT 76-22-2, Camphor 89-80-5, Menthone 108-94-1, Cyclohexanone, reactions 1193-65-3, 3-Quinuclidinone hydrochloride  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(condensation reaction with ferrocenecarbaldehyde)
- IT 100-52-7, Benzaldehyde, reactions 459-57-4, 4-Fluorobenzaldehyde 613-45-6, 2,4-Dimethoxybenzaldehyde  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(condensation reaction with quinuclidinone hydrochloride)
- IT 12093-10-6, Ferrocenecarbaldehyde  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(condensation reactions with quinuclidinone, cyclohexanone, camphor and menthone)
- IT 50643-81-7P, 2,6-Bis(ferrocenylmethylene)cyclohexanone  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(formation in condensation of ferrocenecarbaldehyde with cyclohexanone)
- IT 207680-50-0 207680-52-2 207680-80-6  
RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation, nonpreparative); RACT (Reactant or reagent)  
(intermediate formation in Z-/E-isomerization of ferrocenylmethylenecamphor)
- IT 207680-76-0  
RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation, nonpreparative); RACT (Reactant or reagent)  
(intermediate formation in Z-/E-isomerization of ferrocenylmethylenecamphor and condensation reaction with ferrocenylmethylene(methylene)camphane)
- IT 207680-47-5 207680-48-6 207680-57-7 207680-60-2 209863-86-5  
RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation, nonpreparative); RACT (Reactant or reagent)  
(intermediate formation in Z-/E-isomerization of ferrocenylmethylenequinuclidinone)
- IT 209863-84-3  
RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation,

- nonpreparative); RACT (Reactant or reagent)  
(intermediate formation in Z-/E-isomerization of  
ferrocenylmethylenequinuclidinone and condensation reaction with  
ferrocenylmethylene(methylene)quinuclidine)
- IT 191934-66-4, (Z)-2-Ferrocenylmethylene-3-methylenequinuclidine  
207680-39-5, (E)-3-Ferrocenylmethylene-2-methylenecamphane  
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC  
(Process); RACT (Reactant or reagent)  
(preparation and Z-/E-isomerization of)
- IT 31811-72-0P, (E)-2-Ferrocenylmethylenecyclohexanone 52455-71-7P,  
(Z)-2-Benzylidene-3-quinuclidinone 209863-78-5P, (Z)-2-(2,4-  
Dimethoxybenzylidene)-3-quinuclidinone 209863-81-0P  
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); SPN  
(Synthetic preparation); PREP (Preparation); PROC (Process); RACT  
(Reactant or reagent)  
(preparation and Z-/E-isomerization of)
- IT 209863-76-3P 209863-88-7P 209863-90-1P  
RL: BAC (Biological activity or effector, except adverse); BSU (Biological  
study, unclassified); SPN (Synthetic preparation); BIOL (Biological  
study); PREP (Preparation)  
(preparation and antiviral and antistaphylococcus activities of)
- IT 207680-74-8P, (Z)-3-Ferrocenylmethylene-2-methylenecamphane  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(preparation and condensation reaction with carbocation analog)
- IT 146785-40-2P 191934-68-6P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(preparation and dehydration of)
- IT 209863-79-6P, (E)-2-(4-Fluorobenzylidene)-3-quinuclidinone 209920-89-8P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(preparation and reaction with methylolithium)
- IT 31811-73-1P, (Z)-2-Ferrocenylmethylenecyclohexanone 52455-72-8P,  
(E)-2-Benzylidene-3-quinuclidinone 209863-80-9P, (E)-2-(2,4-  
Dimethoxybenzylidene)-3-quinuclidinone 209863-82-1P,  
(Z)-2-(4-Fluorobenzylidene)-3-methylenequinuclidine 209863-83-2P,  
(E)-2-(4-Fluorobenzylidene)-3-methylenequinuclidine  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)
- IT 131220-71-8P, (Z)-2-Ferrocenylmethylene-3-quinuclidinone 209920-88-7P,  
(E)-3-Ferrocenylmethylenecamphor  
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); SPN  
(Synthetic preparation); PREP (Preparation); PROC (Process); RACT  
(Reactant or reagent)  
(preparation, Z-/E-isomerization and reaction with methylolithium)
- IT 146785-35-5P 209977-04-8P  
RL: BAC (Biological activity or effector, except adverse); BSU (Biological  
study, unclassified); RCT (Reactant); SPN (Synthetic preparation); BIOL  
(Biological study); PREP (Preparation); RACT (Reactant or reagent)  
(preparation, acid-induced fragmentation, and antiviral and  
antistaphylococcus activities of)
- IT 207680-75-9P, (E)-2-Ferrocenylmethylene-3-methylenequinuclidine  
RL: BAC (Biological activity or effector, except adverse); BSU (Biological  
study, unclassified); PEP (Physical, engineering or chemical process); RCT  
(Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP  
(Preparation); PROC (Process); RACT (Reactant or reagent)  
(preparation, antiviral and antistaphylococcus activities,  
Z-/E-isomerization, reaction with Me iodide and condensation reaction  
with carbocation analog)
- IT 209863-75-2P  
RL: BAC (Biological activity or effector, except adverse); BSU (Biological  
study, unclassified); RCT (Reactant); SPN (Synthetic preparation); BIOL

(Biological study); PREP (Preparation); RACT (Reactant or reagent)  
(preparation, antiviral and antistaphylococcus activities, and dehydration of)

IT 131220-72-9P, (E)-2-Ferrocenylmethylene-3-quinuclidinone  
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)  
(preparation, antiviral and antistaphylococcus activities, and reactions with Me iodide and methyl lithium)

IT 209863-77-4P, (Z)-2-(4-Fluorobenzylidene)-3-quinuclidinone  
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)  
(preparation, reaction with methyl lithium and Z-/E-isomerization of)

RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE

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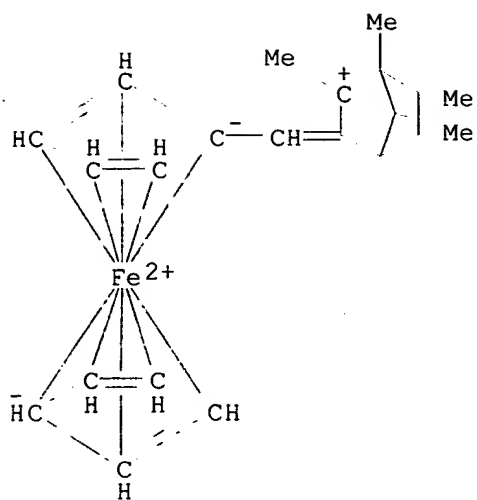
IT 207680-50-0 207680-52-2 207680-80-6  
RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation, nonpreparative); RACT (Reactant or reagent)  
(intermediate formation in Z-/E-isomerization of ferrocenylmethylenecamphor)

RN 207680-50-0 HCAPLUS

CN Bicyclo[2.2.1]hept-2-ylum, 3-(ferrocenylmethylene)-1,2,7,7-tetramethyl-, (3E)-, tetraphenylborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 207680-49-7  
CMF C22 H27 Fe  
CCI CCS

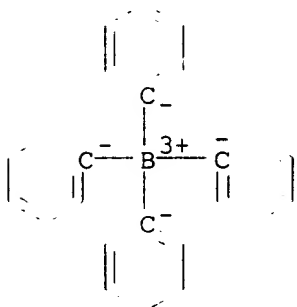


CM 2

CRN 4358-26-3

CMF C24 H20 B

CCI CCS



RN 207680-52-2 HCAPLUS

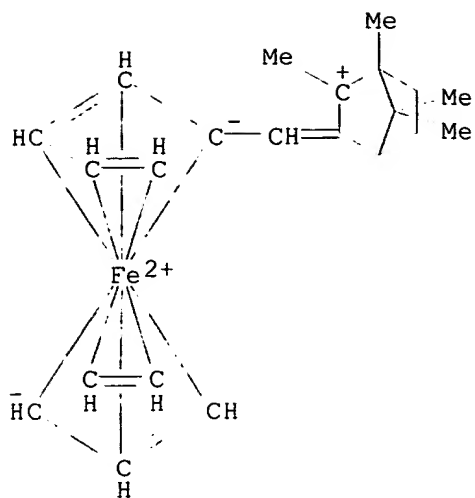
CN Bicyclo[2.2.1]hept-2-ylum, 3-(ferrocenylmethylene)-1,2,7,7-tetramethyl-, (1R,3Z,4S)-, tetraphenylborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 207680-51-1

CMF C22 H27 Fe

CCI CCS

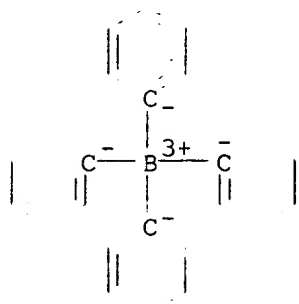


CM 2

CRN 4358-26-3

CMF C24 H20 B

CCI CCS



RN 207680-80-6 HCAPLUS

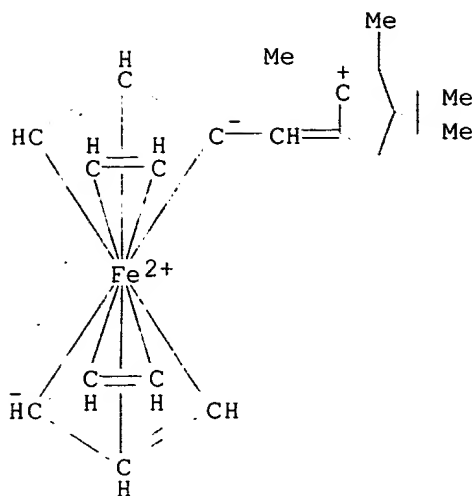
CN Bicyclo[2.2.1]hept-2-ylum, 3-(ferrocenylmethylene)-1,2,7,7-tetramethyl-, (1R,3Z,4S)-, tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 207680-51-1

CMF C22 H27 Fe

CCI CCS

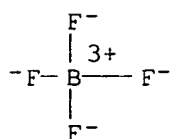


CM 2

CRN 14874-70-5

CMF B F4

CCI CCS



IT 207680-76-0

RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation, nonpreparative); RACT (Reactant or reagent)  
 (intermediate formation in Z-/E-isomerization of ferrocenylmethylenecamphor and condensation reaction with ferrocenylmethylene(methylene)camphane)

RN 207680-76-0 HCAPLUS

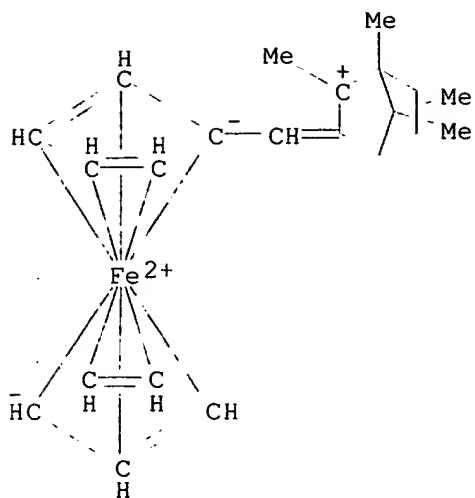
CN Bicyclo[2.2.1]hept-2-ylum, 3-(ferrocenylmethylene)-1,2,7,7-tetramethyl-, (2E)-, tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 207680-49-7

CMF C22 H27 Fe

CCI CCS

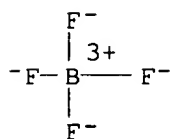


CM 2

CRN 14874-70-5

CMF B F4

CCI CCS



IT 207680-57-7 207680-60-2 209863-86-5

RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation, nonpreparative); RACT (Reactant or reagent)

(intermediate formation in Z-/E-isomerization of ferrocenylmethylenequinuclidinone)

RN 207680-57-7 HCAPLUS

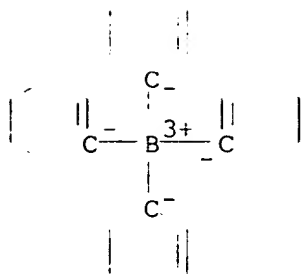
CN 1-Azabicyclo[2.2.2]oct-3-ylum, 2-[(E)-ferrocenylmethylene]-3-methyl-, tetraphenylborate(1-), tetraphenylborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 33906-65-9

CMF C24 H20 B . H

CCI CCS



CM 2

CRN 207726-33-8

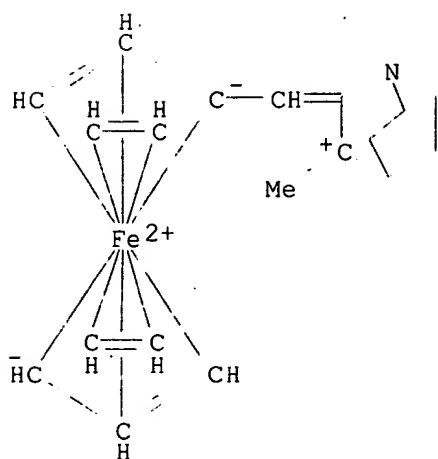
CMF C24 H20 B . C19 H22 Fe N

CM 3

CRN 207680-56-6

CMF C19 H22 Fe N

CCI CCS



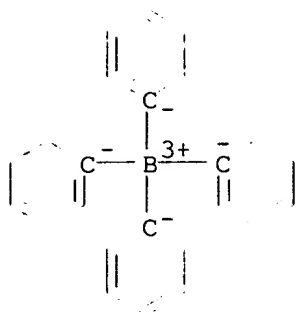
CM 4

CRN 4358-26-3

CMF C24 H20 B

CCI CCS

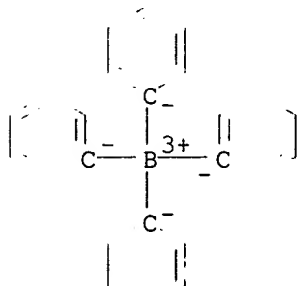




RN 207680-60-2 HCAPLUS  
 CN 1-Azabicyclo[2.2.2]oct-3-ylum, 2-(ferrocenylmethylene)-3-methyl-, (2Z)-, tetraphenylborate(1-), tetraphenylborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 33906-65-9  
 CMF C24 H20 B . H  
 CCI CCS



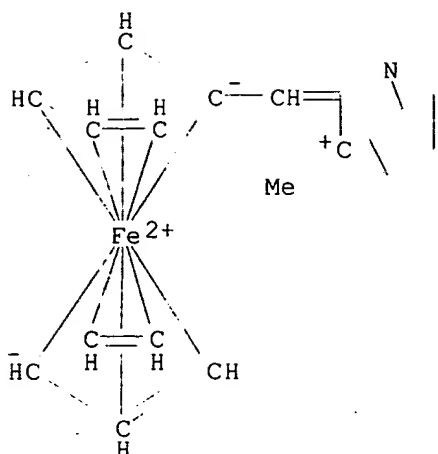
● H<sup>+</sup>

CM 2

CRN 207680-59-9  
 CMF C24 H20 B . C19 H22 Fe N

CM 3

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 CMF C19 H22 Fe N  
 CCI CCS

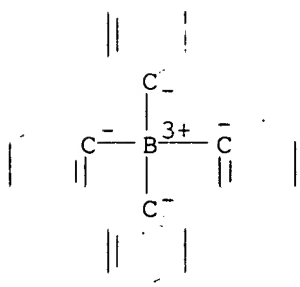


CM 4

CRN 4358-26-3

CMF C24 H20 B

CCI CCS



RN 209863-86-5 HCAPLUS

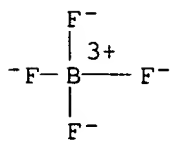
CN 1-Azabicyclo[2.2.2]oct-3-ylum, 2-[(Z)-ferrocenylmethylene]-3-methyl-, tetrafluoroborate(1-), tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 16872-11-0

CMF B F4 . H

CCI CCS

●  $\text{H}^+$

CM 2

CRN 207680-96-4

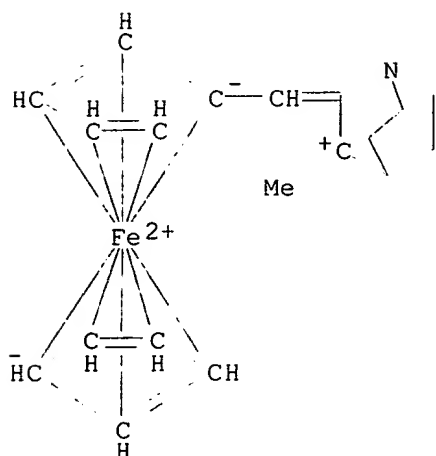
CMF C19 H22 Fe N . B F4

CM 3

CRN 207680-58-8

CMF C19 H22 Fe N

CCI CCS

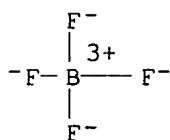


CM 4

CRN 14874-70-5

CMF B F4

CCI CCS



IT 209863-84-3

RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation, nonpreparative); RACT (Reactant or reagent)

(intermediate formation in Z-/E-isomerization of ferrocenylmethylenequinuclidinone and condensation reaction with ferrocenylmethylene(methylene)quinuclidine)

RN 209863-84-3 HCAPLUS

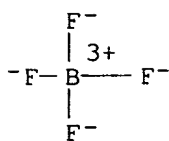
CN 1-Azabicyclo[2.2.2]oct-3-ylum, 2-[(E)-ferrocenylmethylene]-3-methyl-, tetrafluoroborate(1-), tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 16872-11-0

CMF B F4 . H

CCI CCS



CM 2

CRN 207680-93-1

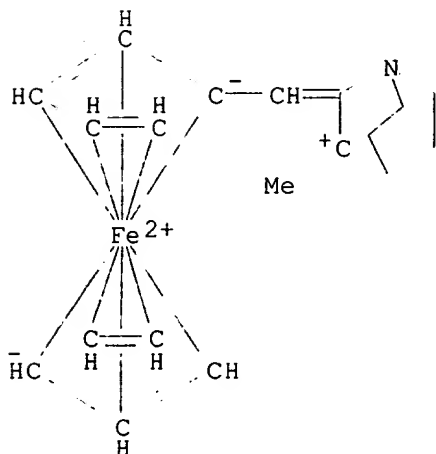
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CM 3

CRN 207680-56-6

CMF C19 H22 Fe N

CCI CCS

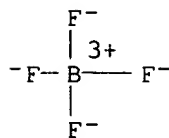


CM 4

CRN 14874-70-5

CMF B F4

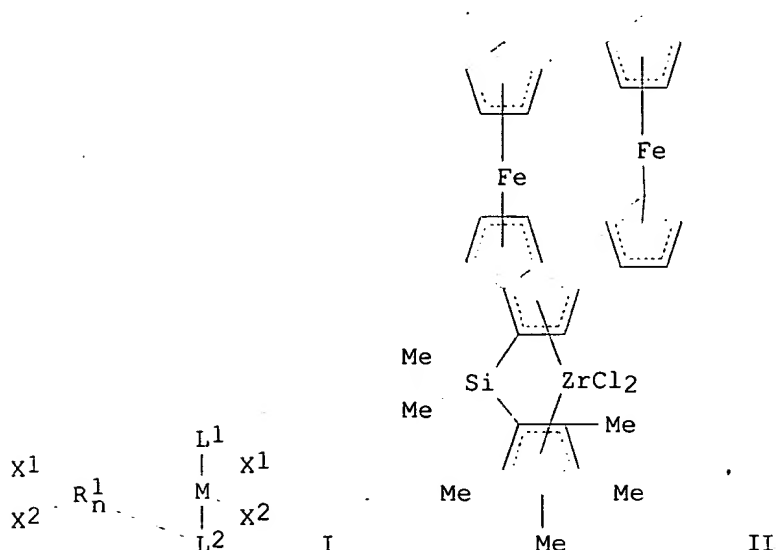
CCI CCS



TI Metallocenes and their manufacture and use in polymerization of olefins.  
 IN Schottenberger, Herwig; Reussner, Jens; Buchmeiser, Michael; Neissl, Wolfgang; Elsner, Olaf; Angleitner, Herbert; Ernst, Eberhard  
 PA PCD-Polymere Gesellschaft m.b.H., Austria  
 SO Eur. Pat. Appl., 21 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA German  
 IC ICM C07F017-00  
 ICS C08F010-00; C07F017-02  
 CC 35-3 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 29, 67

FAN.CNT 1

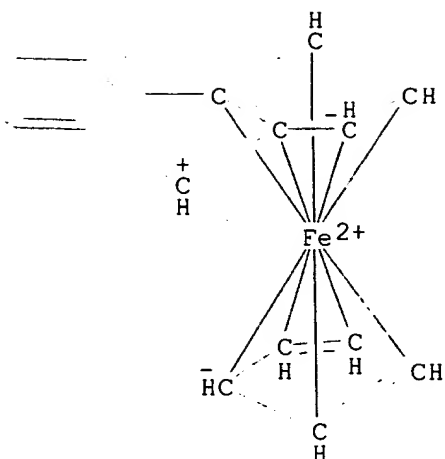
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 673946	A2	19950927	EP 1995-103708	19950315 <--
	EP 673946	A3	19970521		
	EP 673946	B1	20010627		
	R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE				
	AT 9400594	A	19960215	AT 1994-594	19940322
	AT 401520	B	19960925		
	AT 202568	E	20010715	AT 1995-103708	19950315
	ES 2158005	T3	20010901	ES 1995-103708	19950315
	JP 08041088	A2	19960213	JP 1995-61027	19950320
	FI 9501314	A	19950923	FI 1995-1314	19950321
	NO 9501086	A	19950925	NO 1995-1086	19950321
	US 5521265	A	19960528	US 1995-408498	19950322 <--
PRAI	AT 1994-594	A	19940322		
OS	MARPAT 124:57003				
GI					



AB Metallocenes I [M = Ti, Zr, Hf, V, Nb, Ta, or lanthanide; X1, X2 = organic group, H, or halo; L1, L2 = (hydrocarbyl-substituted) cyclopentadienyl, [X1-, X2-, ferrocene- or ruthenocene-substituted and(or) condensed] ferrocene or ruthenocene group, or X1- or X2-substituted amido, phosphido, or arsenido; R1 = C, Si, Ge, or Sn, or X1(R1)X2 = (X1- or X2-substituted) biphenylene, n = 0-4] are useful for polymerization of olefins to give polymers

with broader mol. weight distribution than typical Ziegler-Natta catalysts. A typical catalyst II was manufactured by reduction of 4-ferrocenylferroceno[2,3]cyclopenta-2,4-dien-1-one, lithiation of the resulting 3-ferrocenylferroceno[1,2]cyclopenta-1,3-diene (III), reaction of the lithiated III with tetramethylcyclopentadienyldimethylchlorosilane, and complexation of the 3rd intermediate with  $ZrCl_4 \cdot 2THF$ .

- ST metallocene catalyst olefin polymn; tin complex catalyst olefin polymn; germanium complex catalyst olefin polymn; lanthanocene catalyst olefin polymn; tantalocene catalyst olefin polymn; niobocene catalyst olefin polymn; vanadocene catalyst olefin polymn; hafnocene catalyst olefin polymn; titanocene catalyst olefin polymn; zirconocene catalyst olefin polymn; methylcyclopentadienyl silyl complex catalyst olefin polymn; ferrocenylferrocenocyclopentadiene complex catalyst olefin polymn
- IT **Polymerization catalysts**  
(metallocenes for catalysts for polymerization of olefins.)
- IT Sandwich compounds  
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
(metallocenes for catalysts for polymerization of olefins.)
- IT Aluminoxanes  
RL: CAT (Catalyst use); USES (Uses)  
(Me, cocatalysts; metallocenes for catalysts for polymerization of olefins.)
- IT Alkenes, preparation  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(polymers, metallocenes for catalysts for polymerization of olefins.)
- IT 1292-10-0P 1294-16-2P 1294-17-3P 56423-64-4P 64769-79-5P  
172318-17-1P 172318-24-0P 172318-26-2P 172318-27-3P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(catalyst precursor; metallocenes for catalysts for polymerization of olefins.)
- IT 75-78-5, Dimethyldichlorosilane 881-04-9, Lithium fluorenone 1294-18-4  
4984-82-1, Sodium cyclopentadienide 64769-78-4 84809-38-1  
125542-03-2 148943-11-7  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(catalyst precursor; metallocenes for catalysts for polymerization of olefins.)
- IT 168068-70-0P 172318-14-8P 172318-15-9P 172318-16-0P 172318-18-2P  
172318-19-3P 172318-20-6P 172318-21-7P 172318-22-8P 172318-23-9P  
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
(metallocenes for catalysts for polymerization of olefins.)
- IT 9002-88-4P 9003-07-0P, Polypropylene 9010-79-1P, Ethylene-propylene copolymer 25103-85-9P, Polycyclopentene 32536-03-1P, Cyclopentene-ethylene copolymer  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(metallocenes for catalysts for polymerization of olefins.)
- IT 1294-17-3P 172318-26-2P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(catalyst precursor; metallocenes for catalysts for polymerization of olefins.)
- RN 1294-17-3 HCAPLUS
- CN Iron(1+), ( $\eta^5$ -2,4-cyclopentadien-1-yl)[(1,2,3,3a,8a- $\eta$ )-cyclopent[a]indene]-, tetrafluoroborate(1-) (9CI) (CA INDEX NAME)
- CM 1
- CRN 46844-74-0  
CMF C17 H13 Fe  
CCI CCS

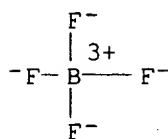


CM 2

CRN 14874-70-5

CMF B F4

CCI CCS



RN 172318-26-2 HCAPLUS

CN Iron(2+), [ $\mu$ -[(1,2,3,3a,8a- $\eta$ :1',2',3',3'a,8'a- $\eta$ )-8,8'-[1,1'-biphenyl]-2,2'-diylbis[cyclopent[a]indene]]]bis( $\eta$ 5-2,4-cyclopentadien-1-yl)di-, bis[tetrafluoroborate(1-)] (9CI) (CA INDEX NAME)

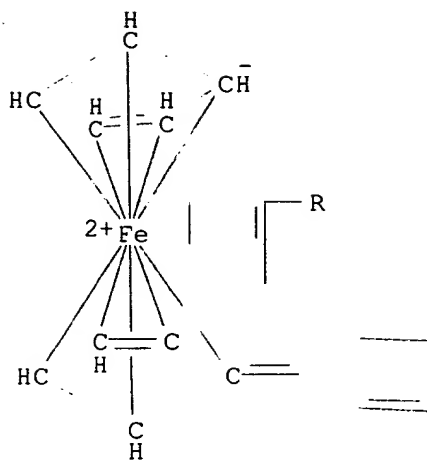
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CRN 172318-25-1

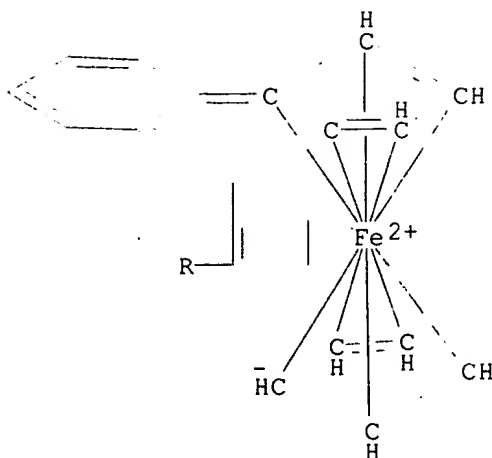
CMF C46 H32 Fe2

CCI CCS

PAGE 1-A



PAGE 2-A

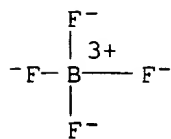


CM 2

CRN 14874-70-5

CMF B F4

CCI CCS





ED Entered STN: 22 Jan 1994  
 TI Initiator for photopolymerization  
 IN Sasaki, Yusuke  
 PA AUTEX, Inc., Japan  
 SO Eur. Pat. Appl., 12 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 IC ICM G03F007-029  
 ICS C08F002-50  
 CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 Section cross-reference(s): 35

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 540371	A1	19930505	EP 1992-402163	19920727 <--
	EP 540371	B1	19971217		
	R: BE, DE, ES, FR, GB, IT, NL, SE				
	JP 05117311	A2	19930514	JP 1991-310048	19911030 <--
	JP 06062692	B4	19940817		
	CA 2074302	AA	19930501	CA 1992-2074302	19920721 <--
	CA 2074302	C	19960903		
	US 5389700	A	19950214	US 1992-919016	19920723 <--
	ES 2113418	T3	19980501	ES 1992-402163	19920727 <--
	US 5480918	A	19960102	US 1994-323519	19941014 <--
PRAI	JP 1991-310048		19911030		
	US 1992-919016		19920723		

OS MARPAT 120:41973

AB A novel initiator for photopolymn. is provided, which can polymerize cationically polymerizable organic material by only irradiating at wavelength of 200-500 nm without specific sensitizer and/or post-curing even when it is used at comparatively small amount, whereby the obtained cured product has good phys. properties and elec. properties. The initiator for photopolymn. of cationically polymerizable organic material comprises a composite obtainable from a reaction between (a) a charge-transfer complex consisting of a biscyclopentadienyl iron derivative and a quinoid and (b) at least one salt selected from a group consisting of tetrafluoroborates, hexafluorophosphates, and hexafluoroantimonates.

ST photopolymn initiator charge transfer complex; photoimaging compn  
 initiator; biscyclopentadienyl iron complex initiator

IT **Polymerization catalysts**

(photochem., cyclopentadienyl iron complexes)

IT Photoimaging compositions and processes

(photopolymerizable, cyclopentadienyl iron complex initiators for)

IT 13755-29-8D, reaction products with ferrocene quinone charge-transfer complexes 16925-25-0D, reaction products with ferrocene quinone charge-transfer complexes 128827-43-0D, reaction products with sodium hexafluoroantimonate 128827-43-0D, reaction products with sodium **tetrafluoroborate** 128827-45-2D, reaction products with sodium hexafluoroantimonate 151840-61-8D, reaction products with sodium hexafluoroantimonate 151840-62-9D, reaction products with sodium hexafluoroantimonate 151840-63-0D, reaction products with sodium hexafluoroantimonate 151840-64-1D, reaction products with sodium hexafluoroantimonate 151840-65-2D, reaction products with sodium hexafluoroantimonate 151899-06-8D, reaction products with sodium hexafluoroantimonate

RL: CAT (Catalyst use); USES (Uses)  
 (photopolymn. catalysts)

DN 114:91960  
 ED Entered STN: 09 Mar 1991  
 TI Photoinitiators and photosensitive compositions containing such photoinitiators  
 IN Adair, Paul C.; Gottschalk, Peter  
 PA Mead Corp., USA  
 SO Eur. Pat. Appl., 13 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 IC ICM G03F007-029  
 CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 78

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 368629	A2	19900516	EP 1989-311532	19891108 <--
	EP 368629	A3	19910731		
	EP 368629	B1	19970806		
	R: DE, FR, GB				
	US 4954414	A	19900904	US 1988-268433	19881108
	CA 2000253	AA	19900508	CA 1989-2000253	19891006 <--
	CN 1042723	A	19900606	CN 1989-108426	19891106 <--
	JP 02182701	A2	19900717	JP 1989-290959	19891108 <--
	JP 2791143	B2	19980827		
PRAI	US 1988-268433		19881108		
OS	MARPAT 114:91960				
AB	The photoinitiators, which consist of a cationic transition metal coordination complex and a borate anion, are capable of absorbing actinic radiation and producing free radicals which can initiate free radical addition polymerization of a free radical addition polymerizable or crosslinkable monomer. These photoinitiators are especially useful in full color photoimaging materials in which the photohardenable compns. are microencapsulated. Thus, an aqueous solution of Co(bpy) <sub>3</sub> was treated with an EtOAc solution of tetramethylammonium tris(p-tert-butylphenyl)butylborate to give tris(2,2'-bipyridine) cobalt tris(p-tert-butylphenyl)butylborate (I). I showed excellent activity as a photoinitiator in the polymerization of trimethylolpropane triacrylate.				
ST	photoimaging compn photoinitiator; transition metal complex borate photoinitiator				
IT	Photoduplication (materials for, microcapsule-based, photoinitiators from transitions metal borates for)				
IT	Photoimaging compositions and processes (photoinitiators for, transition metal complex borates as)				
IT	<b>Polymerization catalysts</b> (photochem., transitions, metals complex borates as)				
IT	131537-64-9P	131537-66-1P	131707-52-3P	131707-53-4P	131707-54-5P
	131707-55-6P	131707-56-7P	131707-57-8P	131707-58-9P	131707-59-0P
	131707-60-3P	132071-51-3P			
RL:	PREP (Preparation) (preparation of, as photoinitiator for photoimaging compns.)				

L86 ANSWER 7 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1988:108837 HCAPLUS  
 DN 108:108837  
 ED Entered STN: 01 Apr 1988  
 TI An improved peroxidase determination using tetraalkylbenzidine  
 IN Pauly, Hans Erwin; Schwarz, Herbert  
 PA Behringwerke A.-G., Fed. Rep. Ger.

SO Ger. Offen., 4 pp.

CODEN: GWXXBX

DT Patent

LA German

IC ICM C12Q001-28

ICS G01N033-53

CC 7-1 (Enzymes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3541978	A1	19870604	DE 1985-3541978	19851128
	EP 224210	A1	19870603	EP 1986-116137	19861121
	EP 224210	B1	19900829		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	AT 56097	E	19900915	AT 1986-116137	19861121
	FI 8604816	A	19870529	FI 1986-4816	19861126
	FI 85877	B	19920228		
	FI 85877	C	19920610		
	DK 8605710	A	19870529	DK 1986-5710	19861127 <--
	AU 8665780	A1	19870604	AU 1986-65780	19861127
	AU 610488	B2	19910523		
	JP 62134100	A2	19870617	JP 1986-280951	19861127
	JP 07108237	B4	19951122		
	ZA 8608980	A	19870729	ZA 1986-8980	19861127
	NO 174262	B	19931227	NO 1986-4776	19861127
	NO 174262	C	19940406		
	CA 1291402	A1	19911029	CA 1986-524125	19861128
	US 5610026	A	19970311	US 1994-291059	19940808

PRAI DE 1985-3541978 19851128  
 EP 1986-116137 19861121  
 US 1986-935333 19861126  
 US 1992-817955 19920108

AB A more sensitive determination of peroxidase activity utilizes a tetraalkylbenzidine substrate in the presence of a peroxide or H<sub>2</sub>O<sub>2</sub>-generating system at pH 2.5-3.9. A solution of 3,3',5,5'-tetramethylbenzidine (TMB) 16 and penicillin G 0.56 mM (pH 1.5) was mixed with 10 volume 3 mM H<sub>2</sub>O<sub>2</sub> (final pH 3.3). The activity of a horse radish peroxidase-IgE conjugate was determined using this solution or one containing .41 mM

TMB, 0.99 (volume/volume)% DMSO, and citrate (pH 6.0). The change in sorbance per min (at 650 nm) using the former was 1.318; using the latter, 0.193.

ST peroxidase detn tetraalkylbenzidine hydrogen peroxide; benzidine tetraalkyl peroxidase detn peroxide

IT Immunochemical analysis

(enzyme-linked immunosorbent assay, peroxidase determination in, improved sensitivity of)

IT 9003-99-0, Peroxidase

RL: ANT (Analyte); ANST (Analytical study)

(determination of, tetraalkylbenzidines for, acid pH in relation to)

IT 92-87-5D, Benzidine, tetraalkyl derivs. 54827-17-7 64285-73-0

RL: BIOL (Biological study)

(peroxidase determination with, acid pH in relation to)

L86 ANSWER 8 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1987:587434 HCAPLUS

DN 107:187434

ED Entered STN: 14 Nov 1987

TI Photosensitive materials containing ionic dye compounds as initiators

IN Gottschalk, Peter; Neckers, Douglas Carlyle; Schuster, Gary Benjamin

PA Mead Corp., USA

SO Eur. Pat. Appl., 17 pp.

CODEN: EPXXDW

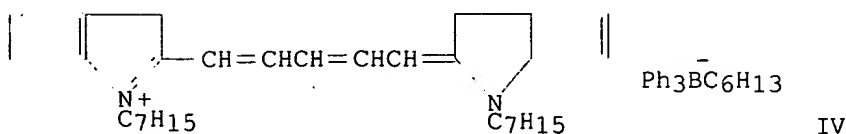
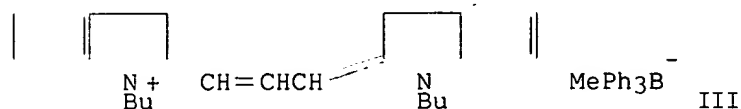
DT Patent

LA English  
 IC ICM C08F002-50  
 ICS G03C001-68  
 CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 223587	A1	19870527	EP 1986-308967	19861118 <--
	EP 223587	B1	19910213		
	R: BE, DE, FR, GB, IT, NL, SE				
	US 4772541	A	19880920	US 1986-917873	19861010 <--
	CA 1284740	A1	19910611	CA 1986-522688	19861112 <--
	DK 8605537	A	19870521	DK 1986-5537	19861119
	BR 8605710	A	19870818	BR 1986-5710	19861119 <--
	CN 86108826	A	19871125	CN 1986-108826	19861119
	JP 62143044	A2	19870626	JP 1986-277762	19861120 <--
	JP 2726258	B2	19980311		
	JP 62150242	A2	19870704	JP 1986-277763	19861120
	US 4772530	A	19880920	US 1986-944305	19861218
	US 4800149	A	19890124	US 1988-156254	19880216
	US 4842980	A	19890627	US 1988-221569	19880720
	US 4937159	A	19900626	US 1988-281303	19881207
	US 5151520	A	19920929	US 1990-472998	19900130
	EP 389067	A2	19900926	EP 1990-201194	19900502
	EP 389067	A3	19901128		
	EP 389067	B1	19941019		
	R: BE, DE, FR, GB, IT, NL, SE				
PRAI	US 1985-800014		19851120		
	US 1986-860367		19860506		
	US 1986-917873		19861010		
	US 1986-944305		19861218		
	US 1988-180915		19880413		

GI



AB Multicolor photoimaging compns. are comprised of microcapsules containing color formers, a free-radical addition polymerizable or crosslinkable compound, and an ionic dye-counter ion compound which is capable of absorbing actinic radiation and producing free radicals which initiate free-radical polymerization

or crosslinking of the compound Color images are formed through exposure-controlled release of the color formers and contact with a color-developing composition Thus, yellow dye-forming microcapsules sensitive at 420 nm and prepared from trimethylolpropane triacrylate (I), dipentaerythritol hydroxypentaacrylate, 3-thenoyl-7-diethylaminocoumarin, 2-mercaptobenzoxazole, 2,6-diisopropylaniline (II), Reakt Yellow, and a polyisocyanate resin; magenta dye-forming microcapsules sensitive at 550 nm and prepared from I, II, HD-5100, and III; and cyan dye-forming

microcapsules sensitive at 650 nm and prepared from I, II CP-177, and IV were blended together and coated on a support to provide a multicolor photoimaging material.

ST photoimaging photopolymerizable compn ionic dye; color photoimaging compn microencapsulated photohardening

IT Photoimaging compositions and processes  
(color, photopolymerizable, microencapsulated, containing dye formers and photopolymerizable monomers and ionic dye-counter ion compound photopolymn. initiators)

IT 101706-71-2, S-29663 110735-23-4

RL: USES (Uses)

(cyan dye former, microcapsules containing photopolymerizable compns. containing monomers and ionic dye-counter ion compound photopolymn.

initiator

and, for color photoimaging compns.)

IT 110736-14-6

RL: USES (Uses)

(magenta dye former, microcapsules containing photopolymerizable compns. containing monomers and ionic dye-counter ion compound photopolymn.

initiator

and, for color photoimaging compns.)

IT 9003-35-4, SF-50 24544-04-5, 2,6-Diisopropylaniline 53200-31-0

RL: USES (Uses)

(microcapsules containing photopolymerizable compns. containing dye formers

and

monomers and ionic dye-counter ion compound photopolymn. initiator and, for color photoimaging compns.)

IT 2243-30-3, Pentamethylaniline 2382-96-9, 2-Mercaptobenzoxazole 77820-11-2

RL: USES (Uses)

(microcapsules containing photopolymerizable compns. containing dye formers

and

monomers and, for color photoimaging compns.)

IT 15625-89-5, Trimethylolpropane triacrylate 60506-81-2

RL: USES (Uses)

(microcapsules containing polypolymerizable compns. containing dye formers

and

ionic dye-counter ion compound photopolymn. initiator and, for color photoimaging compns.)

IT 960-71-4, Triphenylborane

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with butyllithium and tetramethylammonium chloride, photopolymn. initiator from, for color photoimaging compns.)

IT 75-57-0

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with butyllithium and triphenylborane, photopolymn. initiator from, for color photoimaging compns.)

IT 109-72-8, Butyllithium, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with triphenylborane and tetramethylammonium chloride, photopolymn. initiator from, for color photoimaging compns.)

IT 89963-96-2

RL: USES (Uses)

(yellow dye former, microcapsules containing photopolymerizable compns. containing monomers and ionic dye-counter ion compound photopolymn.

initiator

and, for color photoimaging compns.)

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 THE TIME RANGE CODE WILL ALSO CHANGE FROM 018 TO 2004.  
 SDIS USING THE TIME RANGE CODE WILL NEED TO BE UPDATED.  
 FOR FURTHER DETAILS: <http://thomsonderwent.com/chem/polymers/> <<<

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L87 ANSWER 1 OF 3 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN  
 AN 1993-145701 [18] WPIX  
 DNN N1993-111336 DNC C1993-064996  
 TI Initiator for photopolymerisation of cationically polymerisable material - comprising composite obtainable from charge transfer complex of dicyclopentadienyl iron derivative and quinoid and tetra fluoroborate(s).  
 DC A21 A60 E12 E19 P84  
 IN SASAKI, Y  
 PA (AUTE-N) AUTEX INC; (AUTE-N) AUTEX KK  
 CYC 11  
 PI EP 540371 A1 19930505 (199318)\* EN 11p G03F007-029  
     R: BE DE ES FR GB IT NL SE  
     JP 05117311 A 19930514 (199324) 6p C08F004-60  
     CA 2074302 A 19930501 (199328) C07F017-02  
     JP 06062692 B2 19940817 (199431) 6p C08F004-60  
     US 5389700 A 19950214 (199512) 8p C08F002-46  
     US 5480918 A 19960102 (199607) 7p C08F002-46  
     CA 2074302 C 19960903 (199645) C07F017-02  
     EP 540371 B1 19971217 (199804) EN 13p G03F007-029  
     R: BE DE ES FR GB IT NL SE  
     DE 69223593 E 19980129 (199810) G03F007-029 <--  
     ES 2113418 T3 19980501 (199824) G03F007-029  
 ADT EP 540371 A1 EP 1992-402163 19920727; JP 05117311 A JP 1991-310048 19911030; CA 2074302 A CA 1992-2074302 19920721; JP 06062692 B2 JP 1991-310048 19911030; US 5389700 A US 1992-919016 19920723; US 5480918 A Div ex US 1992-919016 19920723, US 1994-323519 19941014; CA 2074302 C CA 1992-2074302 19920721; EP 540371 B1 EP 1992-402163 19920727; DE 69223593 E DE 1992-623593 19920727, EP 1992-402163 19920727; ES 2113418 T3 EP 1992-402163 19920727  
 FDT JP 06062692 B2 Based on JP 05117311; US 5480918 A Div ex US 5389700; DE

69223593 E Based on EP 540371; ES 2113418 T3 Based on EP 540371

PRAI JP 1991-310048 19911030

REP EP 152377; US 3975289

IC ICM C07F017-02; C08F002-46; C08F004-60; G03F007-029

ICS C08F002-48; C08F002-50; C08G059-68; C08J003-28

AB EP 540371 A UPAB: 19931116

An initiator for photopolymerisation of cationically polymerisable material comprised a composite obtainable from (a) a charge-transfer complex of biscyclopentadienyl iron derivative and quinoid; and (b) at least one salt from the gp. of tetrafluoroborates, hexafluoroborates and hexafluoroantimonates.

Also claimed is a method(s) for photopolymerisation of cationically polymerisable organic material, characterised in that said material is exposed to light in the presence of the initiator.

USE/ADVANTAGE - The initiator can effect polymerisation by irradiation at 200-500nm without a specific sensitiser and/or post curing, to give a cured prod. with sufficient hardness and good physical and electrical properties.

Dwg.0/0

FS CPI GMPI

FA AB; DCN

MC CPI: A02-A09; A08-C09; E05-L02A; E08-D02; E10-A06; E31-K07; E31-M; E31-Q02

ABEQ US 5389700 A UPAB: 19950328

Initiator for photopolymerisation of cationically-polymerisable material comprises a composite obtd. from (a) a charge transfer complex; and (b) 0.1-2 equiv. of 1 or more Na-, K or Ag-salt of tetrafluoroborate, hexafluorophosphate and/or hexafluoroantimonate.

Cpd. (a) is prepd. by reacting (i) a bicyclo-pentadienyl Fe-cpd.  $(C_5H_nR_5-n)Fe(C_5H_mR'^5-m)$ , with (ii) 0.1-2 equivs. of quinoid w.r.t. (1). R and R' are each opt. branched opt. satd. or opt. substd. aryl, carboxyl, nitrile or amino; and m and n are each 0-5.

ADVANTAGE - Is effective by irradiating at 200-500 nm without specific sensitiser and/or post-curing.

Dwg.0/0

ABEQ US 5480918 A UPAB: 19960222

A method for photopolymerisation of cationically polymerisable organic material, comprises exposing said cationically polymerisable organic material to light in the presence of an initiator, wherein said initiator is a composite obtainable from a reaction between:

(a) a charge-transfer complex; and

(b) 0.1-2 equivalents per stoichiometric amount of said charge-transfer complex of at least one salt selected from the group consisting of sodium, potassium and silver salts of tetrafluoroborates, hexafluorophosphates and hexafluoroantimonates; wherein said charge transfer complex is obtained by reacting in the presence of a good affinity solvent;

(i) a biscyclopentadienyl iron compound wherein said biscyclopentadienyl iron compound has a general formula

$(C_5H_nR_5-n)Fe(C_5H_mR'^5-m)$ , wherein R and R' are straight or branched, saturated or unsaturated alkyl groups, substituted or non-substituted aryl groups, carboxyl groups, nitrile groups, or amino groups, n and m are integers ranging from 0 to 5; with

(ii) 0.1-2 equivalents per stoichiometric amount of said biscyclopentadienyl compound of a quinoid.

Dwg.0/0

ABEQ EP 540371 B UPAB: 19980126

An initiator for photopolymerisation of cationically polymerisable material comprised a composite obtainable from (a) a charge-transfer complex of biscyclopentadienyl iron derivative and quinoid; and (b) at least one salt from the gp. of tetrafluoroborates, hexafluoroborates and hexafluoroantimonates.

Also claimed is a method(s) for photopolymerisation of cationically polymerisable organic material, characterised in that said material is

exposed to light in the presence of the initiator.

USE/ADVANTAGE - The initiator can effect polymerisation by irradiation at 200-500nm without a specific sensitiser and/or post curing, to give a cured prod. with sufficient hardness and good physical and electrical properties  
Dwg.0/0

L87 ANSWER 2 OF 3 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN  
AN 1990-149549 [20] WPIX  
DNN N1990-115915 DNC C1990-065470  
TI Photoinitiator for addition polymerisable and crosslinkable compsns. - includes cationic transition metal coordination complex and borate anion and produces free radicals on exposure.  
DC A60 A89 E12 G06 P83 P84  
IN ADAIR, P C; GOTTSCHALK, P  
PA (CYCO-N) CYCOLOR INC; (MEAC) MEAD CORP  
CYC 7  
PI EP 368629 A 19900516 (199020)\* 13p  
R: DE FR GB  
CA 2000253 A 19900508 (199027)  
JP 02182701 A 19900717 (199034)  
US 4954414 A 19900904 (199038) 10p  
CN 1042723 A 19900606 (199111) <--  
EP 368629 B1 19970806 (199736) EN 16p G03F007-029  
R: DE FR GB  
DE 68928233 E 19970911 (199742) G03F007-029 <--  
JP 2791143 B2 19980827 (199839) 12p C08F002-50  
ADT EP 368629 A EP 1989-311532 19891108; JP 02182701 A JP 1989-290959 19891108; US 4954414 A US 1988-268433 19881108; EP 368629 B1 EP 1989-311532 19891108; DE 68928233 E DE 1989-628233 19891108, EP 1989-311532 19891108; JP 2791143 B2 JP 1989-290959 19891108  
FDT DE 68928233 E Based on EP 368629; JP 2791143 B2 Previous Publ. JP 02182701  
PRAI US 1988-268433 19881108  
REP 1.Jnl.Ref; A3...9131; EP 223587; NoSR.Pub  
IC C07F015-00; C08F002-50; C08K005-55; G03C001-64; G03F007-02  
ICM C08F002-50; G03F007-029  
ICS C07F015-00; C08K005-55; G03C001-64; G03F007-004; G03F007-02; G03F007-028  
AB EP 368629 A UPAB: 19970619  
A photoinitiator which absorbs active radiation and produces free radicals includes a cationic transition metal coordination complex and a borate anion.  
Also eclaimed is (A) a photohardenable compsn. containing (i) a free radical addition polymerisable or crosslinkable cpd. and (ii) the photoinitiator; and (B) a photosensitive material with support carrying a layer of the photohardenable compsn.  
USE/ADVANTGE - The-photoiniator is sensitive to light emitted in the visible and near UV regions and is used in photosensitive materials containing different set of photohardenable microcapsules which are sensitive to different wavelength and form multicolour images. @(13pp Dwg.No.0/0)  
FS CPI GMPI  
FA AB; DCN  
MC CPI: A02-A09; A08-C09; A10-B06; A11-C02B; A12-L02C; A12-L02D; E05-C; E05-L02A; E05-L02B; E05-M; E05-N; G06-D04; G06-F03B; G06-F03C; G06-F03D  
ABEQ US 4954414 A UPAB: 19930928  
Photopolymerisation initiator comprises a transition metal coordination complex tetraorganoborate of formula (MLm)(N+) n(BR1R2R3R4)- (I). In (I), M is a transition metal with a d6 orbital, e.g. Re(I), Fe(II), RU(II), Os(II), Co(III) and Ir(III); L is a ligand, pref. bi- or tridentate; m is 1 or more; n is 1-3; and R1-R4 are identical or different alkyl, alkenyl, alkynyl, aralkyl, aryl, alkaryl or alicyclic or heterocyclic gps; such that on irradiation and photoexcitation, metal to ligand charge transfer



occurs with the formation of free radicals.

USE - The prods. are photoinitiators for monomer compsns. that can be photopolymerised in visible light. @

ABEQ EP 368629 B UPAB: 19970909

A photoinitiator including a cationic transition metal coordination complex and a borate anion, and being capable of absorbing actinic radiation and producing free radicals, wherein the borate anion is represented by the following formula: R1R2BR3R4, wherein R1, R2, R3 and R4 are the same or different and are selected from alkyl, aryl, aralkyl, alkaryl, alkenyl, alkynyl, alicyclic, heterocyclic, and allyl groups, at least one but not more than three of R1, R2, R3 and R4 being alkyl.  
Dwg.0/0

L87 ANSWER 3 OF 3 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1987-144883 [21] WPIX

CR 1988-285163 [40]; 1989-087647 [12]; 1989-241395 [33]; 1989-317683 [44];  
1990-292010 [39]; 1991-245307 [33]

DNN N1987-108690 DNC C1987-060380

TI Photo-hardenable compsn. for use in full colour materials - contains ionic dye-counter ion polymerisation or crosslinking photoinitiator, which has sensitivity extending to longer wavelengths.

DC A14 A60 A89 A96 E24 G06 P32 P83 P84

IN GOTSCHALK, P; NECKERS, D C; SCHUSTER, G B

PA (MEAC) MEAD CORP

CYC 14

PI EP 223587 A 19870527 (198721)\* EN 17p  
R: BE DE FR GB IT NL SE

JP 62143044 A 19870626 (198731)

JP 62150242 A 19870704 (198732)

BR 8605710 A 19870818 (198738)

DK 8605537 A 19870521 (198750)

US 4772541 A 19880920 (198840) 11p

CN 86108826 A 19871125 (198847)

US 4800149 A 19890124 (198906) 11p

US 4865942 A 19890912 (198946)

EP 223587 B 19910213 (199107)

R: BE DE FR GB IT NL SE

DE 3677527 G 19910321 (199113) <--

CA 1284740 C 19910611 (199128)

KR 9402538 B1 19940325 (199602)

JP 2726258 B2 19980311 (199815) 15p G03F007-025

ADT EP 223587 A EP 1986-308967 19861118; JP 62143044 A JP 1986-277762

19861120; JP 62150242 A JP 1986-277763 19861120; US 4772541 A US

1986-917873 19861010; US 4800149 A US 1988-156254 19880216; KR 9402538 B1

KR 1986-9769 19861119; JP 2726258 B2 JP 1986-277762 19861120

FDT JP 2726258 B2 Previous Publ. JP 62143044

PRAI US 1985-800014 19851120; US 1986-860367 19860506; US 1986-917873  
19861010; US 1988-156254 19880216

REP JP 55039162; US 3775130; EP 176777; EP 196561; EP 224967

IC C08F002-50; G03C001-68; G03C005-00; G03F007-10

ICM G03F007-025; G03F007-029

ICS C08F002-50; C09B017-02; C09B021-00; C09B023-04; C09B023-06;

C09B023-08; C09B069-00; C09B069-10; G03C001-68; G03C005-00;

G03F007-004; G03F007-10

AB EP 223587 A UPAB: 19941013

A photohardenable compsn. contains (1) a free radical addition polymerisable or crosslinkable cpd. and (2) an ionic dye-counter ion cpd. which absorbs actinic radiation to give free radicals which initiate polymerisation or crosslinking of (1). Also claimed is a photosensitive material in which the compsn. is contained in microcapsules.

Prior to exposure the ionic dye-counter ion cpd. is stable and non-transient. On exposure the dye is excited to a singlet state and quenched by the counter ion. Pref. cpds. are (1) a complex of an anionic

dye, especially a xanthene or oxonal dye, with an iodonium or pyrrillium ion; or (2) a cationic dye-borate ion cpd. of formula (I) where D<sup>+</sup> is the cationic dye, pref. a (poly)methine triarylmethane, indoline, azine, thiazine, xanthene, oxazine or acridine, especially (carbo)cyanine, hemicyanine,

rhodamine

or azamethine; and R1-R4 = alkyl, aryl, alkaryl, allyl, aralkyl, alkenyl, alkynyl, alicyclic or opt. saturated heterocyclic gps. Pref. at least one of R1-R4 is alkyl and at least one is aryl. 28 cpds. are exemplified. The photosensitive material pref. has three sets of microcapsules sensitive to red green and blue light respectively and containing cyan, magenta, and yellow image forming cpds. respectively.

USE/ADVANTAGE - The compsn. is sensitive to longer wavelengths (above 400nm). The materials are used to give full colour image, e.g. by exposure followed by capsule rupturing and contact with colour developer. Also the compsn. can be used for photoresists and photolithography.

O/O

Dwg. 0/0

FS CPI GMPI

FA AB

MC CPI: A02-A09; A08-C01; A11-C02B; A12-L02C; A12-L02D; A12-W05; E05-C; E25; E25-B; G06-C; G06-D04; G06-F03B; G06-F03C; G06-F03D

ABEQ EP 223587 B UPAB: 19930922

A photohardenable composition comprising a free radical addition polymerisable or crosslinkable compound and an ionic dye-counter ion compound, said ionic dye-counter ion compound being capable of absorbing actinic radiation and producing free radicals which initiate free radical polymerisation or crosslinking of said polymerisable or crosslinkable compound, said ionic dye-counter ion compound H being a stable non-transient compound with the dye and the counter ion ionically bonded and associated with each other prior to exposure to said actinic radiation, and said counter ion accepting an electron from the dye or donating an electron to the dye upon exposure to such radiation.

ABEQ US 4772541 A UPAB: 19930922

Photohardenable compsn. comprises a free radical addition polymerisable or crosslinkable cpd. and a cationic dye-borate anion complex (I). (I) can absorb actinic radiation and produce free radicals which initiate free radical polymerisation or crosslinking the cpd. Pref. (I) has the formula R1R2B(-)R3R4 D(+) in which D is a cationic dye moiety; and R1, R2, R3 and R4 are the same or different and are alkyl, aryl, aralkyl, alkaryl, alkenyl, alkynyl, alicyclic, heterocyclic or allyl. Pref., the dye is a cationic methine, polymethine, triarylmethane, indoline, ozine, thiazine, xanthene, oxazine or acridine dye.

ADVANTAGE - Photohardenable compsns. are provided which are sensitive at longer wavelengths.

ABEQ US 4800149 A UPAB: 19930922

Photosensitive material comprises a support material coated with microcapsules on one surface; at least some microcapsules contain an image forming, photo-hardening compsn. which includes a polymerisable monomer or crosslinkable polymer and a cationic dye-borate anion complex which can absorb actinic rays and form free radicals.

USE - The prods. are components for data recording and photocopying systems.

ABEQ US 4865942 A UPAB: 19930922

Photohardenable compsn. comprises a free radical addn. polymerisable or crosslinkable cpd. (I), and a cationic dye-borate anion complex. The complex can absorb actinic radiation and produce free radicals which initiate free radical polymerisation or crosslinking of cpd. (I). The cationic dye (II) is a cyanine, carbocyanine, dicarbocyanine or tricarbo-cyanine dye. One pref. dye (II) has the formula (II).

USE/ADVANTAGE - Compsns. are sensitive to visible light e.g. wavelengths above 500 nm, and are useful in imaging materials.

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(FILE 'HOME' ENTERED AT 08:24:12 ON 08 JAN 2004)  
SET COST OFF

FILE 'HCAPLUS' ENTERED AT 08:24:22 ON 08 JAN 2004

L1 1 S (WO2000-JP518 OR JP99-24294)/AP, PRN  
E AUTEX/AP, CS  
L2 4 S E4-E8  
E HIWASA S/AU  
L3 8 S E3, E5  
L4 10 S L1-L3  
E POLYMERIZATION/CT  
E E3+ALL  
L5 3 S E3, E2+NT AND L4  
E E23+ALL  
L6 3 S E2+NT AND L4  
L7 6 S L5, L6  
L8 6 S POLYMER?/SC, SX AND L4  
L9 6 S L7, L8  
L10 3 S L9 AND (?BORON? OR ?BORIC? OR ?BORAT?)  
L11 3 S L1, L10  
SEL RN

FILE 'REGISTRY' ENTERED AT 08:29:03 ON 08 JAN 2004

L12 76 S E1-E76  
L13 35 S L12 AND B/ELS  
L14 38 S L12 AND (TI OR ZR OR FE OR RU OR OS OR HF OR V OR CR OR MO OR  
L15 23 S L13 AND L14  
L16 27 S L13, L14 NOT L15  
L17 1 S FERROCENE/CN  
L18 STR  
L19 SCR 1932  
L20 50 S L18 AND L19  
L21 18657 S L18 AND L19 FUL  
SAV TEMP L21 LAVILLA890/A  
L22 12526 S L21 AND (TI OR ZR OR FE OR RU OR OS OR HF OR V OR CR OR MO OR  
L23 10643 S L22 AND 1/B  
L24 686 S L22 AND 2/B  
L25 8594 S L23, L24 AND NC>=2  
L26 STR  
L27 50 S L26 SAM SUB=L21  
L28 STR L26  
L29 50 S L28 SAM SUB=L21  
L30 3958 S L28 FUL SUB=L21  
SAV L30 LAVILLA890A/A  
L31 3179 S L30 AND L22  
L32 3179 S L31 AND L23, L24  
L33 2784 S L32 AND L25

FILE 'HCAPLUS' ENTERED AT 08:41:14 ON 08 JAN 2004

L34 996 S L33  
L35 2 S L4 AND L34  
E POLYMERIZATION/CT  
E E3+ALL  
E E23+ALL  
L36 93437 S E2  
L37 119105 S E2+NT  
L38 300 S L34 AND L36  
L39 308 S L34 AND L37  
L40 308 S L38, L39  
L41 10 S L40 AND EPOXY  
E EPOXY/CT

L42 395 S E24,E31  
     E EPOXY RESINS/CT  
     E E3+ALL  
 L43 119577 S E7,E6  
 L44 9782 S E38  
 L45 7 S L40 AND L42-L44  
 L46 10 S L41,L45  
 L47 60 S L40 AND (?SILOX? OR ?SILAN? OR ?SILIC?)  
 L48 89 S L40 AND ?CRYST?  
 L49 13 S L48 AND L46,L47  
 L50 11 S L49 NOT L35  
     SEL DN AN 3  
 L51 1 S E1-E3 AND L50  
 L52 3 S L35,L51  
 L53 3 S L48 AND ION ASSOC?  
 L54 3 S L52,L53  
 L55 13 S L34 AND (POLYAMIDE# OR HETEROCYCL? OR PHENOLIC OR ACETAL# OR  
 L56 7 S L40 AND L55  
 L57 9 S L54,L56 AND L1-L11,L34-L56  
 L58 171 S L40 AND (METHYLOL OR HYDROXYMETHYL OR ETHYLEN? OR POLYACETAL?  
 L59 171 S L58 AND L40  
 L60 112 S L33 (L) CAT/RL AND L59  
 L61 3 S L60 AND L57  
 L62 9 S L57,L61  
 L63 80 S L60 AND (PY<=1999 OR PRY<=1999 OR AY<=1999)  
 L64 78 S L63 NOT L62  
 L65 18 S L64 NOT OLEFIN?  
 L66 60 S L64 NOT L65  
 L67 59 S L59 NOT L60,L57  
 L68 42 S L67 AND (PY<=1999 OR PRY<=1999 OR AY<=1999)  
 L69 15 S L68 AND ?CRYS?  
 L70 47 S L48 AND (PY<=1999 OR PRY<=1999 OR AY<=1999)  
 L71 18 S L70 NOT L62-L69  
     SEL DN AN 3 4 18  
 L72 3 S E4-E12 AND L71  
 L73 12 S L62,L72 AND L1-L11,L34-L72  
     SEL DN AN 1 3  
 L74 10 S L73 NOT E13-E18

FILE 'REGISTRY' ENTERED AT 09:11:15 ON 08 JAN 2004

FILE 'HCAPLUS' ENTERED AT 09:11:29 ON 08 JAN 2004

L75 5 S (CN1042723 OR CA1284740 OR CA2000253 OR CA2074302 OR ES211341  
 L76 2 S (EP673946 OR JP841088 OR US5521265 OR JP11152295 OR EP897926  
 L77 1 S KLIMOVA ?/AU AND 1998/PY AND (559 AND 43)/SO AND J ORGANOMET  
 L78 8 S L74-L77 NOT L74  
 L79 5 S L78 AND L1-L11,L34-L74  
 L80 8 S L78,L79  
     SEL RN

FILE 'REGISTRY' ENTERED AT 09:17:54 ON 08 JAN 2004

L81 205 S E19-E223  
 L82 31 S L81 AND B/ELS  
 L83 17 S L81 AND L21  
 L84 14 S L82 NOT L83

FILE 'HCAPLUS' ENTERED AT 09:19:11 ON 08 JAN 2004

L85 3 S L83 AND L80  
 L86 8 S L80,L85

FILE 'WPIX' ENTERED AT 09:45:33 ON 08 JAN 2004

L87 3 S (JP841088 OR CN1042723 OR DE3677527 OR DE68928233 OR DE692235

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Page 102

FILE 'WPIX' ENTERED AT 09:47:29 ON 08 JAN 2004

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